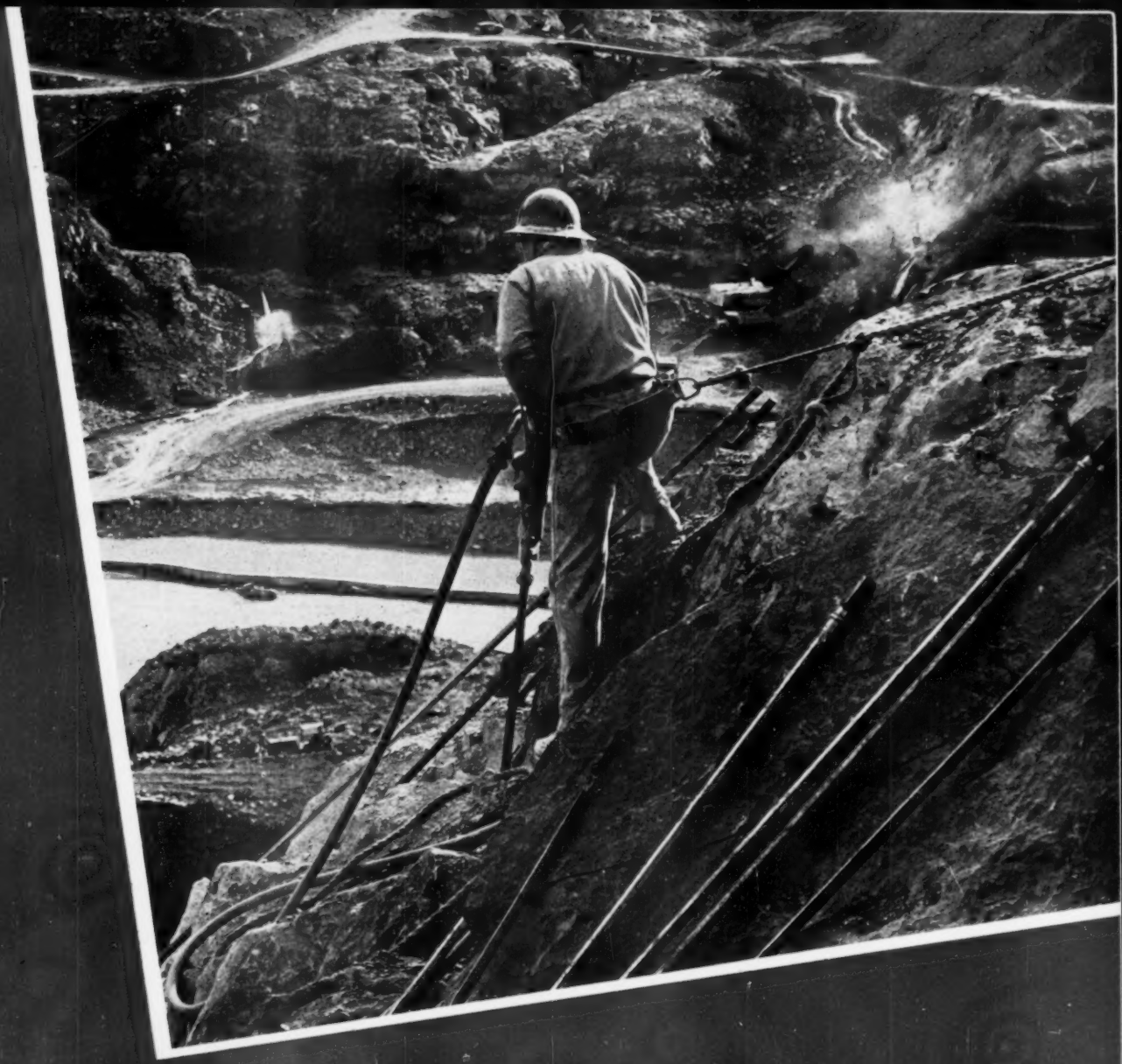


Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

FIFTY CENTS JUNE, 1953

Metal Ful-Vue Safety Glasses

Eye Protection

FROM ANY ANGLE... Good Looking Protection!

Yes, from any angle . . . safety, wide vision, comfort, appearance and its *many* uses, the AO F4100 Series Ful-Vue safety eyewear is outstanding.
These many uses include:

1 Frontal protection against flying particles on machine and hand tool operations and woodworking (Clear 6 Curve Super Armorplate Lenses *without* Side Shields)

2 Frontal and side protection against flying particles when chipping, grinding, polishing, riveting, spot welding, hand nailing . . . on machine, hand tool and woodworking operations . . . when operating tumblers, sand and shot blast machines (Clear 6 Curve Super Armorplate Lenses *with* Side Shields)

3 Glare, ultraviolet, infrared and impact protection for electric welders (worn under helmet), welders' helpers and others exposed to welding. Also for railroad transportation men, truck and bus drivers and others who need protection from wind, dust, cinders, flying particles and glare of reflected sunlight, heat treating, furnace tending and similar exposures. (Calobar Lenses)

Quick Facts

EYEWIRE — Lightweight and durable. Deep grooves hold lenses securely.

ENDPIECE — Wide bearing surface makes for strength and durability.

TEMPLES — Lightweight, easily-adjusted, perspiration proof.

BRIDGE — Double-braced.

SIDE SHIELDS — Available with or without side shields that are easy to replace because of one-piece binder and eyewire.

YOUR NEAREST AO SAFETY PRODUCTS REPRESENTATIVE CAN SUPPLY YOU

American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For further details, use Key # F-1 on free Inquiry Card on page 75)

Summer Style Leaders by **Iron Age**

VENT WEAVE SAFETY OXFORDS

Cool, Comfortable, **VENTILATED** *Safety Oxfords*

No. 612

SIZES 5-12 • WIDTHS A-E

A comfortable, stylish steel toe safety oxford in rich sunburst tan elk. Has long wearing "Leatherplus" outsoles, Grade A rubber heels.

Keep your workers' feet cool in hot weather and they will do a better and more productive job. It's easy when you stock "sell-on-sight" Iron Age ventilated safety oxfords. These highly practical steel toe shoes look smart, feel comfortable and wear exceptionally well. Both styles have the flexibility of custom hand laced vamps. Both are perforated with a multitude of holes so as to "breathe" with every step. You'll take a big step towards boosting your summer coverage by writing a generous stock order today for these inimitable Iron Age value leaders.

MOC-WEAVE SAFETY OXFORDS

No. 614

SIZES 5-12 • WIDTHS A-E

A smartly styled steel toe woven vamp moccasin oxford in glossy chestnut brown. Has the extra value of comfortable, durable "Neolite" soles.

IN STOCK, FOR IMMEDIATE DELIVERY

Iron Age DIVISION

H. CHILDS & CO., INC., Pittsburgh 12, Pa.

The Safety Shoe for Iron Age *Industrial America*

(For further details, use Key # F-2 on free Inquiry Card on page 75)

Published by Alfred M. Best Company, Inc., Publication Office, Columbia Turnpike, Box 232, Rensselaer, N. Y., Editorial and General Offices, Best Building, 75 Fulton St., New York 38, N. Y. Entered as Second Class Matter at Post Office at Rensselaer, N. Y. Under Act of March 3, 1879. Subscription rates, $4.00 Per Year in the United States; $5.00 in Canada; Foreign, $5.00. Single Copies, 50 cents. Publication Date 1st.

NEW WILLSON Kover-Mor Goggles

with strong, lightweight nylon eye cups

NOTICE THE RIGID METAL TOP BAR

—standard on Willson Kover-Mor Goggles. Makes them easier to handle—holds them firmly in place. Two-piece adjustable headband and leather nose-and-bridge curtain also contribute to more comfortable fit.

Ask your Willson distributor for new Kover-Mor* Cup Goggles

*Trademark

Fit easily over modern prescription glasses – use standard 50 mm. round lenses

They offer many benefits to workers in hazardous occupations—

improved design . . . provides snug, comfortable fit—ample room over modern large-frame prescription glasses.

nylon eye cups . . . molded of tough lightweight nylon—strongest plastic used in goggle cups; non-flammable—and won't conduct heat.

standard lenses . . . 50 mm. round flat Super-Tough® lenses used eliminate need to stock odd size replacement lenses—external lens retaining ring makes lens replacement quick and easy.

extra ventilation . . . two-way ventilation is provided by slots in retaining ring and screens in eye cups.

new lightweight comfort . . . total weight of these new goggles is practically the same as smaller "cover all" styles.

More Than 300 Safety Products Carry This Famous Trademark

WILLSON®

Established 1870

WILLSON PRODUCTS, INC. • 207 Washington Street • Reading, Pennsylvania

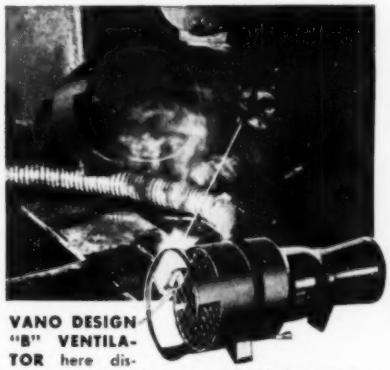
(For further details, use Key # F-3 on free Inquiry Card on page 75)

COPPUS "BLUE RIBBON" VENTILATORS

Used in wide variety of applications throughout industry

Improve workers' safety . . . health . . . comfort . . . efficiency

VANO DESIGN "A" VENTILATOR is used here during repairs to a chemical still. This type ventilator is used to ventilate tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages and other confined places. Uses 8" diameter flexible canvas tubing ("Ventube").



VANO DESIGN "B" VENTILATOR here discharges welding fumes from double-bottom compartment in naval vessel under construction. Large volume of air handled quickly expels fumes and results in good ventilation. Vano Design "B" can pass through opening only 14" in diameter. Uses 8" diameter flexible canvas tubing ("Ventube").

VANO DESIGN "C" VENTILATOR here withdraws fumes from a reactor kettle. This ventilator can be furnished with 8" suction inlet for 8" non-collapsible suction tubing — or multiple inlet nozzles for 5", 4", and 3" suction hose. The discharge may be connected to 8" "Ventube." Capacities furnished on request.

NO. 2 AEROPLANE HEAT KILLER here directs cool, fresh air on worker in drop forge plant. Heat killers restore workers' efficiency by providing extra ventilation in the hot months, or on any job where workers are continually or periodically required to work in excessive heat. Available in two types, three sizes in each.

VENTAIR DESIGN TE-4 VENTILATOR Gasoline Engine Driven, here delivers air into underground manhole. These ventilators provide fresh air to men in confined places, promoting safety, comfort, and increasing efficiency. Ideal where no electric current is available. Delivers 1700 CFM of fresh air. Uses 8" diameter flexible canvas tubing ("Ventube").

PORTAIR NO. 4 BLOWER EXHAUSTER exhausts fumes resulting from soldering, welding, tank coating, is also used in ventilating small tanks. It is designed to permit attachment of 4" flexible metal hose. Capacity: 425 CFM free air.

ATTACH THIS COUPON TO YOUR COMPANY LETTERHEAD

COPPUS ENGINEERING CORPORATION, 326 PARK AVENUE, WORCESTER 2, MASS. Sales offices in Thomas' Register. Other "Blue Ribbon" Products in Chemical Engineering Catalog, Refinery Catalog, Best's Safety Directory and Mining Catalogs.

Please send me information on supplying fresh air to men working:

- ☐ in tanks, tank cars, drums, etc.
- ☐ in underground cable manholes
- ☐ in aeroplane fusilages, wings, etc.
- ☐ on coke ovens
- ☐ on steam-heated rubber processes
- ☐ on boiler repair jobs

COOLING:

- ☐ motors, generators, switchboards
- ☐ wires and sheets
- ☐ general man cooling
- ☐ around cracking stills
- ☐ exhausting welding fumes
- ☐ stirring up stagnant air wherever men are working or material is drying
- ☐ drying of walls, sheets, etc., after treated with coating material

Name .....

Company .....

Address .....

City ..... Zone .... State .....

Write here any special ventilating problem you may have { _____ _____

(For further details, use Key # F-4 on free Inquiry Card on page 75)

Best buy in LEHIGH

We've sold more pairs of this one shoe than any other style in Lehigh history. Why? Because it's a remarkably *fine* shoe at an outstandingly *low* price. Because it's ruggedly made for long, safe service; reinforced like a top-grade work shoe; bottomed for oil-resistance and safe footing. Because the soft, unlined upper leather and the full-laced design gives superlative comfort. Where men resist a heavy work shoe, try this. It's one of the best buys in safety shoes today.

No. 1310X — Russet elk blu-bal with full double soles, oil-resistant Neocord outersole, full grain leather gusset, leather reinforced quarter lining, patented horsehide "***Sock-Saver***" toe lining.

Widths D and E — Sizes 5 to 13

Widths C and EEE — Sizes 6 to 12

FREE pay envelope stuffers

Write on your company letterhead for quantity needed to cover your payroll. Tells your men how to save with safety shoes on and off the job.

LEHIGH
SAFETY SHOE COMPANY
ALLENTOWN, PA.

(For further details, use Key # F-5 on free Inquiry Card on page 75)

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SAFETY MAINTENANCE & PRODUCTION

FORMERLY "SAFETY ENGINEERING"
The Magazine of Safety

A MONTHLY PUBLICATION DEDICATED TO ACCIDENT PREVENTION, MAINTENANCE, HEALTH CONSERVATION AND FIRE CONTROL FOR EFFICIENT PRODUCTION.
EST. 1901

VOL. 105, NO. 6 **JUNE, 1953**

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AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

EDITORIAL PAGE BY ALFRED M. BEST

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★ THE SKIN GAME

HYPOCHONDRIACS and chronic complainers need wide-open ears in which to pour their tale of woe. This bid for sympathy often is based on a desire to seem important or "different" from the common herd. In extreme cases, a frequent recital of real or fancied ailments calls for psychiatry, or at least a post-graduate course in how to avoid becoming a crashing bore.

Many human ills produce the opposite effect. The nature of their symptoms builds up a wall of silence and even secrecy with the result that the poor victim is cheated of the doubtful relief of complaining aloud to his immediate associates.

A case in point is any serious inflammation of the skin, commonly called dermatitis. An industrial employee will moan to high heaven about his aching back but any skin disturbance seems to carry an unpleasant connotation. After decades of consulting records, we know that dermatitis is the chief threat to industrial health and because of complex procedures, individual allergies, new substances and techniques in industry there certainly is no reason to view inflammation of the skin as a biblical scourge resulting from personal sin.

★ ★ ★

The safety director of a large eastern shipyard has traced one form of dermatitis afflicting his men to the oil of cashew nuts.

It seems that the oils recovered from crushing the shells of cashew nuts imported from abroad are in great demand in the paint and varnish industries. Tanks containing this oil are apparently cleaned with great thoroughness and yet the shipyard employees working in and around the tanks have developed severe skin rash. Following work on one single barge, six lost-time cases developed because of dermatitis and in some instances the affliction required treatment in a hospital.

It has been estimated that 65% of all occupational disease is caused by various dermatoses. This estimate must be considered extremely conservative in the light of new processes and substances introduced by industry's progress. Certain solvents for example, do an excellent job of cleaning or de-greasing delicate machine parts. But they may play havoc with the human skin. That 65% represents about 50% of all dollars paid in industrial disease claims and make up about 3% of *all* compensation cases. Thus we find that dermatoses burden us with an estimated cost of one hundred million dollars a year!

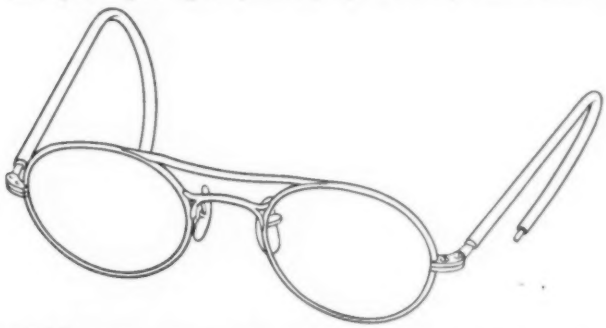
In the case of the serious, painful and costly dermatitis caused by oil of cashew nut shells, the fluid may be heavily contaminated by harmful bacteria. If so, then a fool-proof system of protracted disinfection is indicated. Certainly, a rigorous regimen of personal cleanliness will help to control the frequency and severity of the skin disease cases. Protective creams of tested worth, marketed by reputable experts should be given an exhaustive trial. Personal protective apparel, too, can do much to curb this nerve-shattering ailment.

The shipyard in question is making a general appeal for help and guidance in dealing with its outbreak of dermatitis traced by its medical department to cashew nuts. If any subscriber or manufacturer's representative has information of value, a great service to its staff can be accomplished by forwarding recommendation to the Editor.

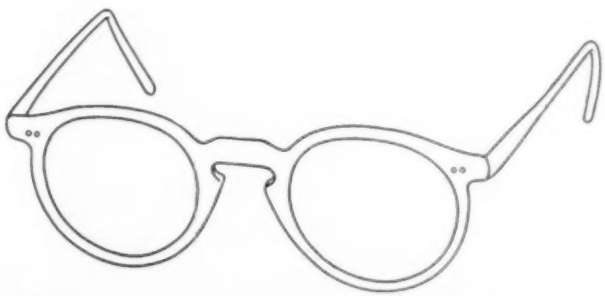
METAL frames or ACETATE...

ALWAYS SPECIFY BAUSCH & LOMB SAFETY EYEWEAR

With some eye-protection problems, a toss of a coin could determine the choice of metal frame over acetate—or vice versa. Usually, though, the job situation dictates the frame type. In any case, the degree of protection depends on the skill in the design, quality workmanship and materials. You can be sure of the quality, always, if you specify safety eyewear by Bausch & Lomb.



H-10—Non-corrosive white metal frame with rigid double bridge construction, actually lighter than its Bausch & Lomb acetate counterpart. Rugged, easy to fit. Cable temples are insulated, sweatproofed.



Y-70—All-acetate model is ideal for workers whose skin is sensitive to metal frames. A favorite with women because with rigid temples Y-70 is easy to slip on and off without mussing hairdo. As with H-10, above, full range of bridge sizes and lens sizes. Ideal for safety lenses ground to worker's prescription. Ask for full data: Bausch & Lomb Optical Company, 90518 Smith St., Rochester, N.Y.

You can benefit from these Bausch & Lomb industrial vision services

1. **Complete Line of Protective Eyewear**—Completely dependable safety eyewear engineered to meet the most rigid tests for every job in your plant. Protection from all types of eye hazards.

2. **Corrective-Protective Service**—Fast, dependable laboratory service in every major industrial area for professionally-prescribed corrective safety lenses for worker comfort and efficiency.

3. **Plant Surveys on Eye Protection**—Bausch & Lomb offers services of experienced safety experts to investigate problems of eye-hazardous operations in your plant and make recommendations for their solution.

4. **Employee Education Programs**—Posters for bulletin boards, pay envelope inserts, other material designed to stimulate interest among workers for eye safety measures; an adjunct to your safety program.

5. **Occupational Vision Service**—A quick, dependable method for relating visual performance of each employee to his job. The Bausch & Lomb Ortho-Rater is especially valuable for identifying accident-prone workers.

6. **Leadership in Optical Science**—For 100 years Bausch & Lomb has been a leader in research and development of products to serve better the optical and visual needs of mankind. All industry is profiting today from this knowledge and experience.

1853 1953 INTO A NEW CENTURY OF OPTICAL PROGRESS

BAUSCH & LOMB CENTENNIAL

BAUSCH & LOMB *Safety Eyewear*

(For further details, use Key # F-6 on free Inquiry Card on page 75)

. . . Then **ALGRIP** Banished Slipping Accidents and Pared the Company's High Insurance Rates!

Take a machine tool, surround it with oil-filmed flooring, and you've set the stage for a tragedy. This one—in a southern industrial plant—cost a skilled workman his arm.

ELIMINATED: Crippling accidents that slashed production.

SAVED: Lost man-hours and high insurance premiums.

Then we installed A.W. ALGRIP Abrasive Rolled Steel Floor Plate. Result: No more slipping accidents! For tough abrasive "grinding-wheel" grain, rolled deeply and densely into steel plate, makes ALGRIP truly non-skid. It's almost impossible to slip on this hard-gripping floor plate—even when it's wet or oily—even on steep inclines!

Benefit: *A three-way saving . . . (1) No more costly, crippling accidents. (2) More efficient work and better production. (3) A substantial reduction of workmen's compensation insurance premiums—substantial enough, in fact, to pay for the cost of the ALGRIP installation!*

End Slipping Accidents that Cripple Men and Production—and Kite Insurance Premiums.

A.W. ALGRIP—only abrasive rolled steel floor plate in the world—pays for itself in savings from safety. Get the full ALGRIP story today; write for our new Booklet AL-15—without obligation.

Over 125 Years of Iron and Steel Making Experience

ALGRIP Abrasive Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
Other Products: A.W. SUPER-DIAMOND Floor Plate
Plates • Sheet • Strip (Alloy and Special Grades)

(For further details, use Key # F-7 on free Inquiry Card on page 75)

Check List of Aids to Production:

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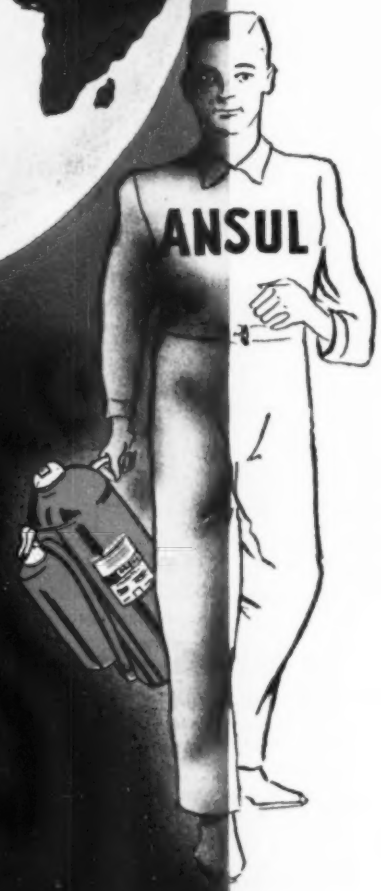
MORE SERVICE

FROM

ANSUL

All Ansul Fire Extinguishing Equipment is backed by Ansul's personnel training and service policy . . . In addition, a written five year warranty guarantees each extinguisher is free of defects . . . assuring dependable fire protection.

Ansul Extinguishers have long been the leaders in the dry chemical fire extinguisher field because they provide the *best protection* for flammable liquid, gas and electrical fires.



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•

EXPORT DISTRIBUTORS AND DEALERS SERVE 31 COUNTRIES AT OVER 60 LOCATIONS

Write for File No. N-40. Printed material supplied will be helpful to all men responsible for fire protection.

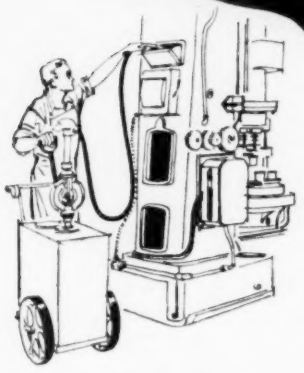
ANSUL
Chemical Company
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF FIRE EXTINGUISHING EQUIPMENT, INDUSTRIAL AND FINE ORGANIC CHEMICALS, LIQUEFIED GASES AND REFRIGERATION PRODUCTS

(For further details, use Key # F-8 on free Inquiry Card on page 75)

no. 1 BUY

for handling INDUSTRIAL LIQUIDS!



Here's why a Tokheim is better!

- ***More Efficient!*** Even at low temperatures — double-action—no wasted motion.
- ***More useful!*** Handles many liquids of most any viscosity including oil and water.
- ***Safer!*** Eliminates many hazards common to other methods of transfer.
- ***Trouble-free!*** Operation not affected by ice, dirt, etc.—easily serviced.

Look inside a Tokheim and you'll see why this amazing double-action pump is tops with so many manufacturers. Its rugged, economical diaphragm construction means low original cost, minimum maintenance. Thousands in daily use giving dependable service-free performance. Eliminates slippery floors. Reduces fire and accident hazards. Delivers up to 20 gallons per minute. Offered with optional parts for handling a wide range of liquids. Available with hose or spout outlets for drum, skid tank or underground installations. Call your dealer or your Tokheim representative. Do it soon!

Write factory for literature

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT
1672 WABASH AVE. SINCE 1901 FORT WAYNE 1, IND.
Factory Branch: 1309 Howard Street, San Francisco, California
(For further details, use Key # F-9 on free Inquiry Card on page 75)

THE FUTURE SHOWS

Chicago, Ill. *June 2–4*

June 2–4. Greater Chicago Safety Conference (Conrad Hilton Hotel). Joseph F. Stech, manager, Greater Chicago Safety Council, 10 No. Clark St., Chicago 2, Ill.

Portland, Ore. *June 4–6*

Nineteenth annual Forest Products Safety Conference. (Multnomah Hotel.) Pat Reiten, secretary, Simpson Logging Co., Shelton, Wash.

Cleveland, Ohio *June 22–26*

First convention of National League for Nursing. (Cleveland Public Auditorium.) Mrs. Edith Wensley, Director of Public Relations, National League for Nursing, 2 Park Ave., New York 16, N. Y.

Harrisburg, Pa. *Sept. 16–17*

Pennsylvania Industrial Safety Conference (Hotel Penn Harris). Frank K. Bohl, deputy secretary, Dept. of Labor & Industry, Room 304 So. Office Bldg., Harrisburg, Pa.

York Harbor, Me. *Sept. 17–18*

Sept. 17–18. Twenty-Sixth Annual Maine State Safety Conference (Marshall House). A. F. Minchin, secretary, Industrial Safety Division, Department of Labor and Industry, Augusta, Me.

Chicago, Ill. *Oct. 19–23*

Forty-first National Safety Congress and Exposition. (Conrad Hilton Hotel.) R. L. Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Cincinnati, Ohio *Nov. 17–18*

Third annual Greater Cincinnati Safety Conference. (Sheraton-Gibson Hotel.) Kenneth R. Miller, executive director, Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Bldg., Cincinnati 2, Ohio.

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STUDY OF ACTUAL FALLING SEQUENCE BY STROBOSCOPIC MULTI-FLASH EQUIPMENT AT 1/10,000 OF A SECOND

...use FLOORSAFE,

the new anti-slip floor dressing

Protect your place of business from crippling falls. Floorsafe gives your floors "Traction-Action."

Anti-slip synthetics with a high coefficient of friction are used in the manufacture of this new floor dressing discovery.

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MASURY-YOUNG COMPANY

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BRANCH OFFICES IN PRINCIPAL CITIES

(For further details, use Key # P-10 on free Inquiry Card on page 75)

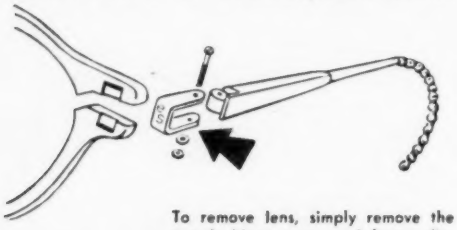
ANOTHER NEW

WATCHEMOKET eye SAVERS

designed for
longer life — lower cost
eye protection

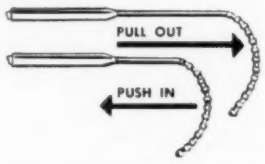
SPLIT-JOINT
Model 80
PLASTIC FRAME SPECTACLE

For Plano or Prescription-Glass or Plastic Lenses



To remove lens, simply remove the temple hinge screw and frame clip. Spread the Split-Joint and lens falls out. Reverse procedure to insert lens firmly in frame.

Double bridge design strengthens frame eliminating possibility of breakage. Lower section forms comfortable fitting nose-bridge.



Eye Savers new Plastic Retrax® Temples are easy to fit . . . safer and more comfortable to wear.

See Your Authorized Eye-Savers Jobber for complete details and demonstration or write direct.

QUICK, EASY LENS REPLACEMENT
No Special Heaters Required . . .

The need for special heaters which often cause stretched or warped frames is eliminated by the Split-Joint Frame. A simple operation and lenses are easily removed and new lenses quickly inserted. Once inserted, lenses stay firmly in place. All parts are standard and replaceable at low cost.

NOSE-BRIDGE GIVES EXTRA STRENGTH
Proven Design Fits 90% . . .

Double bridge design more than doubles strength of Split-Joint frame. Nose-bridge fits 90% of all faces — as proven in actual use on the famous "Tuc-Away". It fits *ON* the nose — is more comfortable — does not pinch or effect the sinuses. One size bridge eliminates stocking various frame sizes.

EXCLUSIVE NEW PLASTIC RETRAX® TEMPLES
Easily Adjusted by the Workers . . .

Retrax* Temples easily telescope in or out to any desired length and stay firmly in position. Extra-tough for long wear, these Plastic Temples are safer — no metal. Temples are more comfortable around the ear because new "ball-chain" ear hook fits itself *into* the cartilage in back of ear.

TWO SIZES AVAILABLE: Split-Joint Plastic Frames are available in two sizes to hold 45 x 48 mm and 42 x 44 mm lenses. Use them to insert your own safety lenses (prescription or plano). Or buy complete with regular 45 x 48 mm or 42 x 45 mm hardened safety glass lenses — 6.0 base or 1.25 base curves — in clear or 1, 2 or 3 green shades.

*Trademark

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

WATCHEMOKET OPTICAL CO., INC.

225 West Exchange St.
PROVIDENCE 3, R. I.

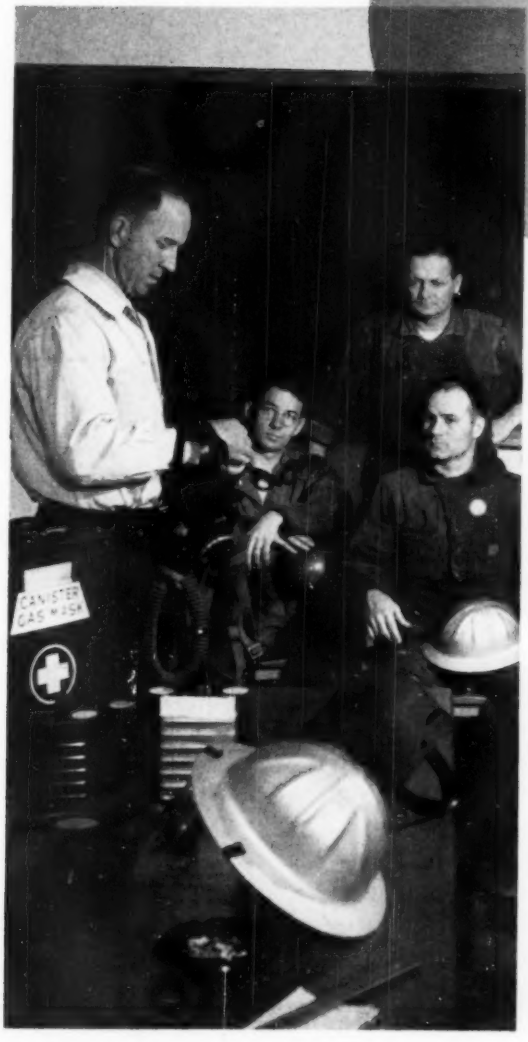
In Canada: Levitt-Safety Limited, Toronto 10, Montreal 1

(For further details, use Key # F-11 on free Inquiry Card on page 75)

SAFETY MAINTENANCE & PRODUCTION

VOL. 105, No. 6 • JUNE, 1953

Build Better Public Relations Through Safety



By FRANKLIN G. WILSON
Director, Safety & Fire Protection Services
American Petroleum Institute

HOW does a safety program contribute to the success of a company's public relations program? In what ways may the public relations program work hand in hand with safety activities? Is there an area in which the two, by cooperating, may each work more effectively?

Before trying to answer these questions let us decide what we are talking about. What is meant by "public relations"; by "safety"?

A firm has public relations whether it wants to or not. Public relations aren't just a department or a function; they're a state of things, good or bad, which exists between any company and the public.

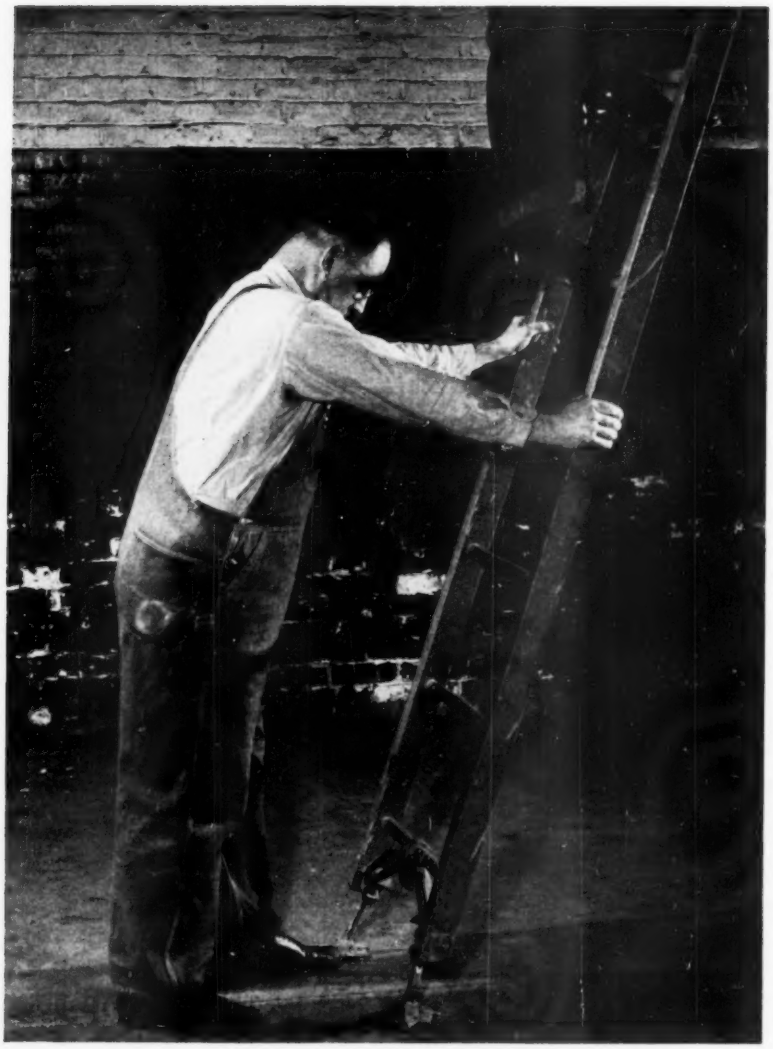
There is a widely held, but over-simplified definition, which says that public relations is "good conduct and getting credit for it." An expanded definition, more readily understood, states:

> "Public relations is the art of analyzing, influencing and interpreting a person, idea, group, or business so that its behavior will conform to the greatest degree possible with the public interest."

Public relations comes into sharp focus when viewed as a three-way operation: 1—analysis; 2—in-

(Continued on page 65)

LADDER SAFETY



STARTS ON THE GROUND

FEATURE

First in a feature series on Ladders & Scaffolds. Next articles will appear in July & August issues.

LADDERS—unlike geniuses—are "made—not born." How well they perform their important functions depends on how you select, use and care for them. Following a few simple precautions will make them constantly valuable tools; ignoring these precautions will transform them into constant hazards.

There are many kinds of ladders, but there is a right one for every job. Don't sacrifice safety for a false economy by making a ladder "do" for a job that requires a different design.

Step Ladders These self-supporting ladders, available in different heights—from the step-stool type for handling work just out of reach from the floor to the full-size step ladder for washing, lighting repair and other maintenance tasks—are the general purpose tool for many industries. They require a flat surface for even footing and safe use. Size is indicated by the length of the ladder measured along the front edge of the side rails. Heavy-duty types for constant, hard maintenance work and for supporting unusually heavy loads can be purchased. A particular kind of step ladder, designed for electricians, mechanics, plumbers, stock-room workers and lighting maintenance crews is the platform ladder. This heavy duty ladder has a large platform at the top which provides adequate space for equipment and freedom of movement.

Single Ladders Single section ladders, non-adjustable and not self-supporting, these ladders are designed for general above-ground work. Special types for tree-trimming and fruit-picking have been designed as well as roof ladders with cornice hooks. Size is measured by the length of the side rail.

Sectional Ladders Particularly useful for work involving considerable transportation, this type of ladder consists of several sections that can be broken down for travel on plant-trucks and then joined for use as one ladder. Non-adjustable in length, they can, however, be joined section by section for extreme heights, as in chimney construction, and are valuable for electricians and other maintenance men. Size is measured by the length of the assembled sections.

Extension Ladders This type of non-self-supporting ladder is adjustable in length by ropes and pulleys and can be fixed in position by automatic spring locks. It is particularly useful for painting, electrical maintenance and fire-fighting at considerable heights. It is important to remember in purchasing ladders of this type that they cannot be used the full length of the individual sections. Since the size of extension ladders is designated by the sum of the lengths of the individual sections, allowance for at least a 3-foot overlap must be made. For example, a 36-foot extension ladder has a usable length of only 33 feet.

Trestle Ladders These ladders are self-supporting, non-adjustable, hinged or fixed construction, used for supporting jacks and painters' scaffolding. Rungs should be staggered at different levels for a wide choice of working levels. For higher work, trestle ladders can be obtained with extension sections. Size of trestle ladders is measured by the length of the side rails along the front edge.

Rolling Ladders This type of ladder is attached either to an overhead trolley, permitting it to roll forward and backward down an aisle, or to a guide rail along the wall, permitting it to move sideways along the wall. Both varieties are particularly adaptable to storerooms.

Ladder Attachments

Attachments of various kinds make ladders suitable for different uses and give an additional measure of safety. Guard rails and steel ladder brackets provide extra hand holds, step reinforcement and protection against falls. Hooks for holding to a roof or wall and leg equalizers furnish extra stability. Ladder shoes for wet, uneven or dry surfaces, and spikes for icy surfaces are also obtainable. A self-centering top, which prevents tilting or swaying of ladders when used against trees, poles, corners of buildings, etc., is a rubber-covered rung mounted on swivels at the top of the ladder.

When you have selected the type of ladder you want and it arrives, inspection is the next important step. The manufacturer is responsible for seeing to it that the wood is of good quality and properly seasoned; that rungs and side rails are of the proper type of wood; that defects that affect the strength of the ladder are limited in accordance with standards; and that the ladder is well-made. However, it is important that you—the user—check on these qualities.

Ladders, except for some specialty items, are sold in an unpainted or unfinished condition. This permits constant checking for any safety failures. Indeed, some state codes require that ladders be sold in this

manner. As far as the quality and kind of wood is concerned, the newly revised American Standard Safety Code for Portable Wood Ladders A14.1-1952 is the best guide for the kind and thickness of wood to be used to support various loads. The code gives the thickness requirements of 4 classes of woods used for various ladder parts. Group 1, the hardest woods, include hickory, white ash, and white oak. Group 2 comprises the denser softwoods, southern yellow-pine, Douglas-fir and western larch. Group 3 consists of medium density softwoods and hardwoods, spruce, noble fir, west coast hemlock, Norway pine and yellow poplar. Group 4 contains lower density hardwoods and softwoods such as soft maple, black cottonwood, eastern hemlock, lodgepole pine, Buckeye, Aspen, sugar pine and Idaho white pine. All of these are acceptable for ladder construction.

Whatever type of wood is used the thickness should be such as to allow the ladder to carry a concentrated load of 200 pounds when the load is centered on a rung midway between the side rails, in accordance with the American Safety Standard Code. For heavy usage it is wise to look for a ladder that has metal supports underneath the steps or rungs. Inspect the workmanship of the ladder carefully. If hardware is carelessly attached, rivets not properly peened or headed, movable parts not operating freely or metal parts are not treated against corrosion, you have a weak link in your ladder and it is not safe to use.

Wood Defects

Irregularities in the wood can often cause accidents. Check the ladder for cross grain, knots, pitch pockets, shakes, checks, wanes, decay and compression wood.

Cross Grain The slope of the grain is the deviation of the fiber from a line parallel to the side of the piece of wood. Cross grain may be diagonal, spiral or both. The acceptable deviation is 1 inch in 12 inches, except for ladders under 10 feet in length with flat steps, when the allowable deviation is 1 inch in 10. For rungs the deviation may be only 1 in 15 inches—for steps 1 in 12.

Knots These deformities, the result of cutting through a branch embedded in the tree during manufacture, are allowable under certain circumstances. The size of the knot is determined by the average diameter of knots on the surface of a wooden part. They are not allowable on the narrow surfaces of side rails, cannot be more than ⅛ inch in diameter on rungs or ¼ inch on steps or more than ½ inch on the wide surfaces of side rails. In the last case they must be ½ inch from the edge and not occur more frequently than one to every 3 feet of ladder length.

Pitch Pockets A well-defined opening between rings of annual growth, which contains or has contained pitch or bark, these defects are permissible in side rails if they are not wider than ⅛ inch, deeper than ½ inch or longer than 2 inches, and appear only once in 3 feet of ladder length.

Checks and Shakes Separations of wood across or between rings of annual growth, these are permitted on side rails if they are not more than 6 inches long or ½ inch deep.

Wane Bark or the lack of wood on the corner of a ladder part is not permissible.

Decay Look for this disintegration of wood, due to wood-destroying fungi. It is dangerous.

Compression Wood This abnormal growth in softwoods is characterized by relatively wide annual rings and soft summerwood.

Watch particularly for compression failure which consists of buckling of the fibers due to excessive compression along the grain. For more detailed checking the American Standards Code gives specifications for such requirements as spacing of rungs, dimensions of all parts, bracings and attachments.

The inspection procedure just recommended entails close examination of the ladder and its parts. It does not provide a strength test, because there is no simple satisfactory method of proof-testing wood for strength. The first impulse on buying a ladder is probably to try to give it some sort of a strength test, to see if it is safe. Giving it a crushing load or jumping up and down on a ladder supported only on the ends are common methods—but they prove nothing. If the ladder came through the torture without breaking, does that mean it is safe to use? Probably it is more dangerous now than before it was subjected to loads it was not designed to bear. Excessive strains are cumulative and can lead to a serious, dangerous break later. Don't test your ladder; give it a critical visual inspection.

Proper Use

Regardless of how strong or perfect a ladder may be or how carefully you've inspected it, it must be used properly to keep it from becoming a hazard. Here are some safety rules to follow:

Portable ladders should be used at a pitch where the distance from the foot of the support to the foot of the ladder is one-quarter the length of the ladder. Any increase of this proportion leads either to serious strain on the ladder or loss of stability.

The ladder should be on level footing and placed or held to prevent slipping.

Ladders should not be used in a horizontal position as a platform, runway or scaffold or for any other purpose for which they were not designed.

Do not permit crowding on ladders.

Do not place ladders in front of doors opening toward the ladder unless the door is locked, blocked open or guarded.

Do not put ladders on any unstable base, such as boxes or barrels, to obtain additional height.

Support the top of a ladder at a window opening by attaching a board across the back of the ladder long enough to support the ladder

(Continued on page 56)

Pittsburgh COLOR DYNAMICS*

Makes This Steel Plant Better And Safer To Work In!

Color is put to work in the hot and cold strip mills of Detroit Steel Corporation to improve working conditions, lessen danger of accidents and increase production efficiency.

GREATER EFFICIENCY . . . fewer time-loss accidents . . . better industrial relations! These important benefits result from the use of Pittsburgh COLOR DYNAMICS in the hot and cold strip mills of the Detroit Steel Corporation, in Portsmouth, Ohio.

● **This large plant** was recently painted as part of a huge sixty million dollar expansion and modernization program. The rated output of these mills is in excess of a million tons annually.

● **"We turned to Pittsburgh** COLOR DYNAMICS to improve working conditions in this mill," states H. E. Baughman, Vice-President in charge of the Portsmouth division. "We believe that the kind of job a worker turns out often reflects his environment.

● **"By painting according** to the principles of COLOR DYNAMICS, we have given our employees pleasant surroundings. By using color purposefully, we have also reduced eye fatigue which so often leads to physical fatigue. This has resulted in more efficient performance. At the same time it has decreased danger of time-loss accidents.

● **"Our workers take pride** in their new surroundings. They help to keep them clean and orderly, simplifying housekeeping. These new surroundings have also helped to improve relations between our workers and management.

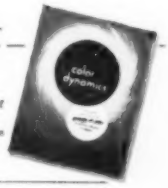
● **"From every standpoint,** we are confident that Pittsburgh COLOR DYNAMICS has created a helpful condition throughout our entire operation."

COLOR DYNAMICS Engineering Study Of Your Plant — FREE!

● To paint your plant with COLOR DYNAMICS costs no more than a conventional maintenance job. Why not try it on a machine or two—or in an entire department—and discover how it will improve efficiency, morale and safety.

● Send for *free* book on COLOR DYNAMICS. Better still, call your nearest Pittsburgh Plate Glass Company branch and ask to have a representative give you a color engineering study without cost or obligation. Or mail this coupon.

SEND FOR A COPY OF THIS BOOK →



Pittsburgh Plate Glass Co.,
Paint Div., Dept. SM&P-63
Pittsburgh 22, Pa.

☐ Please send me a FREE copy of your booklet, "*Color Dynamics*."

☐ Please have your representative call for a Color Dynamics Survey without obligation on our part.

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PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES, LIMITED

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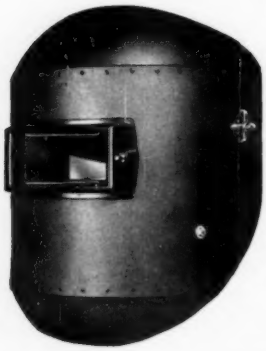
SELLSTROM *Quality Eye and Face* SAFEGUARDS

Published by Sellstrom Manufacturing Company 656 No. Aberdeen St., Chicago 22, Ill.

Top Quality Helmet With Your Choice of Fittings



It's big and roomy but not too bulky. It's the Sellstrom 244 three-piece helmet made of .055 vulcanized fiber; offers full protection: top, bottom, front and sides. Equipped with the Standard Headgear, which is easily adjusted for size, has an adjustable vulcoid strap over the head, genuine leather sweatband. Standard Front Loading Plate Retainer of plastic and steel combines light weight construction, durability and simplicity of operation. Inner and outer frame are bolted into place. Spring holds plate firmly in position. Front loading style permits quick replacement of plates; can change cover plate without disturbing filter plate.

Two Optional Headgears

Presto Shield Headgear. This is the Sellstrom "P" headgear, equipped with automatic eye shield of clear plastic, offering full eye protection when the helmet is raised. The eye shield is a part of the headgear. When the hood is down, the eye shield is above the head. The moment the hood is raised, the eye shield automatically lowers to give full protection to the eyes. On special request a green eye shield can be furnished instead of the standard clear plastic shield.

Sel-o-Matic Headgear. The "M" identifies this headgear on any Sellstrom helmet. Here are a few of the outstanding features: (1) Can be adjusted with one hand while the helmet is on the head. (2) Once adjusted, it remains secure until changed by human hands. (3) Can be used with any and all styles of Sellstrom helmets. (4) Any worn parts can easily be replaced by a layman. (5) So far as is known, this is the only headgear with the teeth cut in a special plastic impregnated tough vulcoid fiber, impervious to water and moisture. The vulcoid is a special tough material, is stronger and keeps its shape better than material which absorbs water or moisture. (6) The back sectional sleeve and the adjusting knob are made of strong plastic. (7) The three round knob holes give the headgear three sets of teeth and permit this "Sel-o-Matic" headgear to outlast and outwear three ordinary headgears. (8) Equipped with a standard sweat pad, kept in place by real sweat band leather and glove fasteners.

Optional New "S" Lift Front Plate Holder

"S" always identifies the new Lift Front Plate Holder when this letter follows the helmet number. Designed for rounded helmets. This new plate holder is molded from heat resisting Durez, with a pressed steel cover front as an extra protection if accidentally dropped. It combines light weight and strength, is absolutely light proof. The inner clear safety plate is mounted in a stationary frame, separate and behind the movable filter plate mounted in the door of the plate holder. When the filter plate is lifted for clear vision, the clear plate fully protects the eyes from flying slag. The filter plate and the clear plate are held in place by separate tension springs. The window is firmly kept in an up or down position by hidden springs in the hinges. The cover plate can be changed without removing the filter plate. The filter plate window or front section telescopes into the inner section to eliminate all light at the edges and corners.

"Absorband" Sweat Band Stops Perspiration Blues

How can industrial workers do an efficient job if they have the hot weather perspiration blues, with the sweat from the forehead constantly running into their eyes?

Some years ago Sellstrom solved this problem by manufacturing what is now our No. 440 "Absorband" felt sweat band. It is made of the finest obtainable absorptive white felt, treated to absorb a great deal more perspiration than ordinary felt. Each "Absorband" comes in an individual sanitary envelope.

When saturated with perspiration it can easily be rinsed in water, wrung out, and is again ready for use. It fits snugly on the forehead and is kept in place by a flat elastic band. Before using this sweat band it should be dipped into water and squeezed out as it will absorb more perspiration moisture when moist.

During the past few summer seasons the sales of this sweat band have grown enormously. Each year the former buyers repeat, while there are always a number of new customers. This is natural as the use of "Absorbands" greatly increases working efficiency. Because of their low cost each "Absorband" can actually pay for itself half a dozen times a day—increased production is made possible as workers do not have to stop every few minutes to use a handkerchief to wipe the perspiration from their forehead. It should be a hot weather "must" in every industrial plant.

If your dealer does not handle this "specialty", write us direct for prices and a free sample for test purposes.

(For further details, use Key # F-12 on free Inquiry Card on page 75)

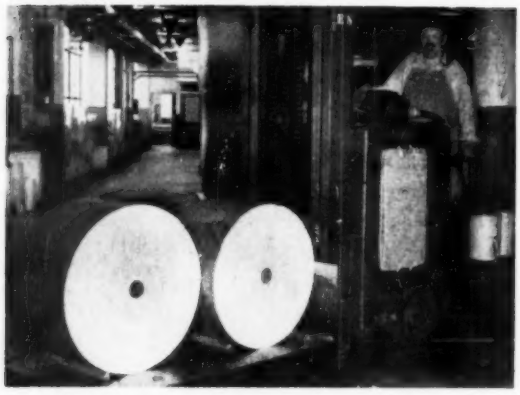
"SAFETY MAINTENANCE" Salutes a Safety Idea

What's Your Safety "IQ"?

JUDGING from the number of radio and TV "give-away" programs, all of us love a quiz. The *Stan Record Graphic*, house organ of the Standard Register Co. of Dayton, Ohio, adapted the idea by running a Safety Quiz in one of its recent issues. The prize was an awakened safety consciousness on the part of the employees and a resulting freedom from injuries.

The Safety Quiz was worked out by the safety director, Frank Zaleski, in cooperation with the editors of the house organ, Alex Kaye and Donald Miller. Employees of the company posed for the pictures. Some of the pictures illustrate the proper safety method, while others show poor safety practices. The correct answers are given on page 69.

Right ☐ 1 ☐ Wrong



Right ☐ 2 ☐ Wrong

Right ☐ 3 ☐ Wrong

Right ☐ 4 ☐ Wrong

Right ☐ 5 ☐ Wrong

Right ☐ 6 ☐ Wrong

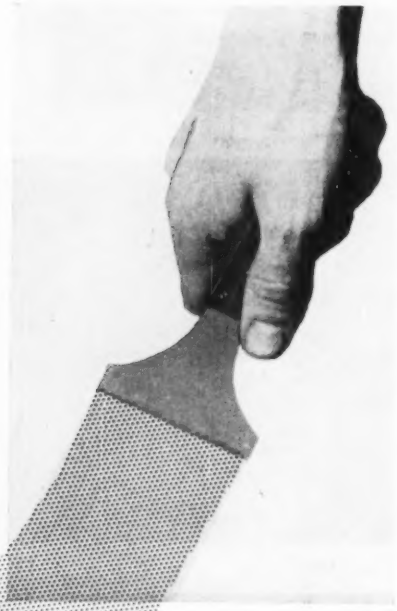
Right ☐ 7 ☐ Wrong

Right ☐ 8 ☐ Wrong

Painting for

FEATURE

Second in the series of articles on Plant Sanitation. The third in July.



Do You Know These Facts About Color —

Do you know, for instance:

- *that motorists have a greater urge to pass red, yellow, cream or maroon colored cars.*
- *that office workers feel cold in green rooms, and several degrees warmer with orange curtains, or orange slipcovers on their chairs.*
- *that mosquitoes despise orange and will stay away from places protected by orange lamps.*
- *that flies hate blue so violently they won't come near packing plants with blue windows.*

People and Protection

By HOWARD KETCHAM
Color, Design & Illumination Engr.
Howard Ketcham, Inc.
New York City

PRIOR to 1935, little had been done to apply color-knowledge to everyday living. Today, seventeen years later, intensive research has made the influence, both of color and lighting, a major consideration in industrial planning and plant design. Also valuable have been contributions to transportation on the ground and in the air; and here, as in schools and in the home, a great deal remains to be done.

In industry, results of intelligent use of color and lighting have been immediate and positive. Worker morale has improved, and with it, worker efficiency. Elimination of "unintentional camouflage" in color, and dimness or glare from faulty lighting has paid off in reduced nervous tension and eye-strain, and in lowered accident-rates.

Although the psychological effect of color is part of our everyday experience, only recent scientific research has systematized our knowledge of the subject so that we can, today, make full use of the complex impact which color has on us.

For most of us, yellow and red are gay and stimulating; black and grey have depressing associations. Some people find green vitalizing, like yellow or red. One manufacturer found green-painted cafeteria walls relaxing to workers who came to it from white workrooms.

Color and Efficiency

Color also makes people feel better while working. A radio-tube manufacturer encountered a color problem on his production line. An important operation involved highly precise spot-welding by women using machines having gas jets placed in a circular position. Exacting work placed great strain on the eyes. Work-benches, painted sky-blue (psychologically cool) counteracted heat from the welding. Machines themselves were painted light orange for contrast with dark jets. Dark blue or black directly under the machines heightened the visibility of bright metal machine-parts.

Delighted management reported "The results are astounding. In a mill-town where most of the employees are aware of nothing but drab, colorless mill interiors, the color alone was highly satisfying. The girls in all sections began to clamor for it—foremen became so enthusiastic they did a lot of repainting themselves. Again, some employees bought denim dusters, colored to match the machinery. The plant became markedly cleaner, and, most important, shrinkage—that is, rejects, breakage, anything not passing inspection—showed an immediate and marked decrease . . . rejects on one item had decreased two-thirds within the first week. . . . Every cent expended on paint-color has more then repaid that expense, in dollars."

A color engineering project was completed at the Wire and Rope Division of the Jones and Laughlin Steel Corporation. Working time lost through accidents dropped 38 percent in the first six months after the job was finished. Improved employee morale reduced absenteeism from about 5 percent to less than 2 percent. Labor turn-over dropped from about 4.5 percent to less than .45. Operator efficiency on complicated wire-twisting equipment climbed from 85 to 90 percent between 1945, when the color-project was started, and 1948 when it was completed.

Color and Lighting

Studies by the Better Vision Institute point up the toll on eyes taken by improper color and lighting. In the U. S., 23 percent of the people have defective eyesight at the age of 15. By 50, the percentage has climbed to 75. By 60, 95 percent of the eyes are defective. One of three workers in the U.S. needs glasses. 50 percent of office and textile workers, and 75 percent of garment workers have faulty vision. These increases are not due to advancing age alone. They point to the need for much more efficient use of color and lighting.

Because it can be rigidly standardized at all times of day, artificial lighting often promotes greater efficiency and safety than regular daylight. One example is the classification of cotton, where variations in light or incidental shadows tend to distort the classifier's judgment. Fluorescent lamps in the ratio 3.40W daylight to 2.20W blue, to 4.25W tungsten filament lamps make most satisfactory artificial daylight, though lamps from different manufacturers vary in color. (As a check, correlated color temperature of the combination should be about 7500 units.) Lamp units should be 6 feet above tables, at 8 feet center intervals.

Visibility depends on good illumination, but good illumination does not always mean more light. Lighting and color specialists work for glareless lighting and clear but restful contrasts.

Good reflecting colors usually give greatest worker efficiency and lowest light bills. White has a reflection value of 88 percent, cream

69 percent, ivory 67 percent, sky blue 65 percent, pale green 59 percent, buff 52 percent, grey, of the type used in many old-fashioned factories only 50 percent. With the exception of yellowish, colors will not reflect efficiently if too far removed from white. On the other hand, white itself soils easily, often lacks eye appeal, or creates excessive contrast. To avoid eye-fatigue, colors directly in line with the workers' eyes should be about the same brightness as the bench-top or working area. Soft shades such as light grey, pale green, and light blue are restful, line-of-vision colors; light grey, being especially practical as a dust-concealer as well.

In modern buildings and plants, ceilings reflect the greatest volume of light. The Illuminating Engineering Society reports that, in one large office-building, a change from light buff to white ceilings (where white is effective) and the addition of cream-colored walls would have cut lighting costs about $14,000 per year. Very high walls may also be painted white for added reflection. Very low ceilings can be raised visually by the use of a receding sky blue.

Contrast and Similarity

To the busy stenographer or bookkeeper a dark desk-top means eyestrain through over-contrast with white paper. Light grey desk-tops are more restful. On adding machines, appropriately contrasting colored keyboards improve legibility. Inaccuracies decrease. The situation could be further helped by a floor having a reflection factor of at least 25 percent. A stocking factory changed dark work surfaces to light blue—saved eyes of girls at work on dark-colored stockings, cut down rejects.

Distinctive colors pick out moving parts of machinery, center attention on them. Neutral backgrounds eliminate distraction from the field of vision. Again, better vision, more accuracy, less eyestrain, fewer accidents.

In one Brockton, Massachusetts plant, shoemakers worked at black machines, using black thread, stitching black shoes. Wall colors were equally gloomy and dismal. Light green, blue, orange and cream brought more light to the work and its surroundings. Light-reflecting paint freshened and cleaned up workroom walls. Particular attention was given to background and to attention-color, like orange, for moving parts. Workers reported less eyestrain and relief from nervous fatigue. Absences declined. Best of all, the accident rate fell off sharply.

Anyone who has tried to thread a needle will appreciate why hosiery mill workers looping thread over a series of fine needles are distracted by strong light contrasts and by movement of neighboring workers. Grey-blue panels around the tables shut out confusion and provide a needed neutral background. A small pale-grey mask, behind a riveting-machine, pin-pointing the operator's attention and cutting out visual distraction, can save many fingers from injury due to faulty distance estimation.

The spatial behavior of color makes camouflage possible. "Reverse camouflage" makes desired objects easier to see. Bands of "safety yellow" along the sides of aisles stop workers from drifting into dangerous traffic zones. Black and yellow striping warns of obstacles on floors, or overhead. Again, spatially used, the appropriate green applied to walls in cramped spaces "moves them back" visually. This particular factor, obviously has many applications to airliner cabins, cockpits, cabs of engines and other situations where a sense of space and air contributes to comfort and relaxation.

The ideas we have been discussing are not separable. When we shoot for one, we usually get the others. Good visibility, efficient lighting, colors which do not strain the eyes, spatial color functionally used—all these add up to harmony and beauty. Higher morale means better work, and conversely; what helps a man to do better work usually raises his morale. One thing is certain, dollars spent in improving color and lighting always mean greater safety and efficiency, always pay off in less waste and large output.

Unintentional Camouflage

The most important fact about modern transportation is that it moves much faster than it used to, and that, in times to come, we can expect it to move faster still. What moves faster hits harder. A crumpled fender at fifteen miles per hour means a crumpled vehicle at sixty-five or seventy. Split-second decisions depend on seeing clearly and interpreting correctly in every situation. On the ground or in the air "unintentional camouflage" is deadly.

Color treatments, readily distinguishable at the greatest distance and in various lights, are most desirable. Field tests of color vision show that orange is the most effective color, followed in order of decreasing effectiveness by yellow, green, red, and blue. Oranges and yellows as well as luminous white and aluminum are the most suitable for front and rear of commercial vehicles. Red and green are seen as shades of grey by about 2 percent of the population. Red has the further disadvantage of appearing progressively blacker under progressively dimming light. Light-dark contrast heightens visibility and focuses attention.

The illumination under which the color is to function is also important. Yellowish red (orange) is most visible in daylight. White and aluminum show up best at night under the usual headlamps, as do most metallic-type finishes, which act as semi-reflectors. Choice of color depends on background quite

(Continued on page 24)

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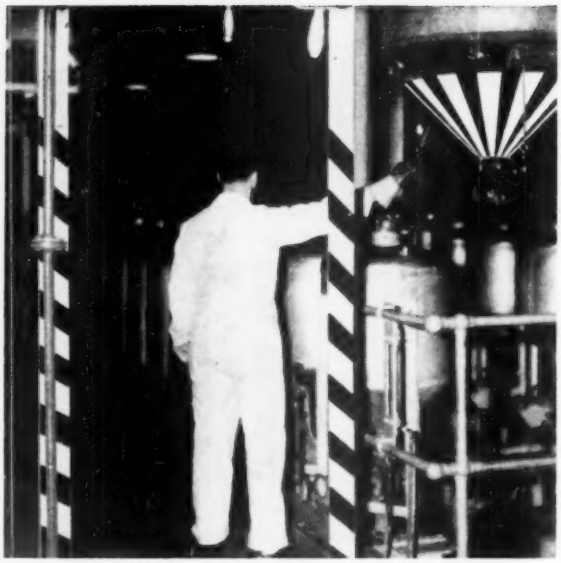
as much as on qualities of the colors themselves. The green and yellow color scheme on Diesel locomotives of a Pacific Coast Railroad lost them completely in California foliage. Silver and black, the next choice would not show up against Nevada desert. Black and orange finally removed the hazard.

Locomotive Visibility

The field grey, which Long Island Railroad employees had found refreshingly new and different from old type conventional "train" color, proved too perfect a match for the Long Island terrain, especially in time of low-lying mist, or at dusk. To warn motorists at grade crossings and to preclude other accidents, locomotive headlights were kept on through the day. Orange, added to the front end of the locomotives, increased visibility. A similar problem, presented by the New Jersey Central Railroad, was solved by an orange and blue color-scheme. These two colors, used together, enhance each other, reinforcing their visual impact and making for higher long-range visibility.

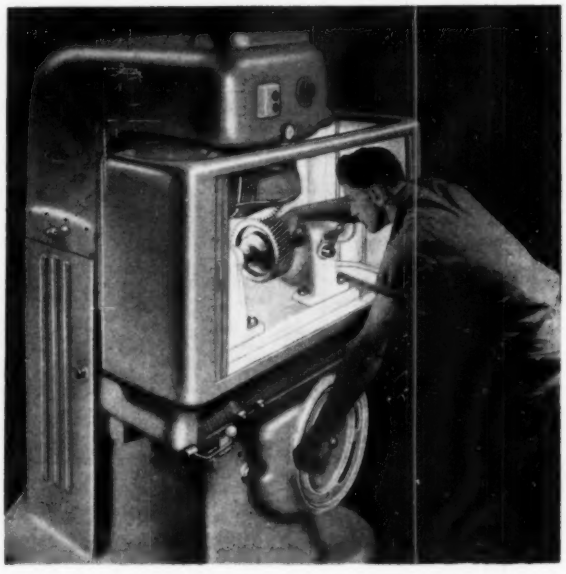
In water transportation, vacillations of the weather, and the constantly shifting colors on the surface of the water complicate the choice of color. Modern color engineering, in coping with these difficulties, also significantly improves shipboard morale.



Travelling overhead equipment and posts adjacent to passageways command attention when striped in yellow — the correct Color Code hue for striking-against, stumbling or falling hazards. Note that the man operating the overhead equipment is dressed in white or other bright color and can easily be seen even under adverse conditions. Plant-truck driver coming upon this man suddenly is warned to stop by color.

In 1951, color plans for the Baltimore and Ohio Railroad's tugboats which ply the crowded harbors of New York and Baltimore were changed from low-visibility black and maroon colors to a high-visibility combination of orange and brown. For Jersey Central's tugs, high-visibility greens replaced the old style olive drab. Colors like grey-green and dark blue unrelieved by contrasting color are just as unwise for ships as they are for motor transport. Many of our contemporaries seem to have forgotten the fact that Julius Caesar used blue paint on the rigging of his triremes because he wanted to hide them.

How color works to expand or contract a workroom has already been discussed. It can be made to perform similar spatial tricks for boats. In a recent selection of colors for ferry-boats of a commuter railroad, color was used to achieve maximum visibility and minimizing of the vessels' squat appearance. The proposed color scheme involved colors getting progressively lighter from waterline to funnel. Red, two shades of green, and white were used. The combination achieved both of the goals which had been set. The company soon reported heightened morale among crew members, and an increase in the advertising value of their marine equipment. Soon, principles of color engineering will be put to work for the Navy which will make cramped quarters a better place for crews to live. The Navy knows how much high morale contributes to over-all efficiency.



Maximum utilization of light at the working level has been created by use of contrasting colors in this gear machine. The interior working areas have been treated with ivory to emphasize the moving parts and yet not present too much glare or reflection. The rest of the machine is finished in green with danger areas highlighted in red. All controls are also marked in vivid hues.

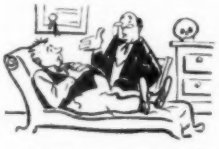
Traffic Safety and Color

Safety demands that busses and automobiles be visible against a variety of backgrounds and under varying conditions of light. Some years ago, the National Safety Council and education officials chose

Superstitious....

about breaking a mirror?

"Seven years' bad luck," Mr. Dillberry moaned. Then he proceeded to nick his ear while shaving. "Starting already," he told himself.



Next day the psychiatrist looked down at the limp figure on his couch.

"Coincidences," he said. "You were so nervous about the mirror you got careless. The burnt finger, the bump on the head, the stubbed toe. It all fits. All except the slip-accident on your office floor —and I suggest you talk to your maintenance man about that."

"It's the wax," the maintenance manager explained. "We have to protect the floors from the daily pounding they take. But once they're buffed and walked on, they get slick as a *mirror.*"

Mr. Dillberry winced. "Don't use that word."

From his casualty insurance company, he learned about the LEGGE System of Safety Floor Maintenance. Learned that polished floors *don't have to be slippery.* Because LEGGE Safety Polishes go *75%* beyond Underwriters' Laboratories requirements for slip-resistance—yet shine floors bright as a new penny. And the protection *lasts.* Tests show LEGGE polishes stay on the floor up to *8 times* longer than most waxes. That's a *big* saving in materials and labor.

Soon things got back to normal. Mr. Dillberry forgot his superstition. But first he ordered a *7 years'* supply of LEGGE Polishes.

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light chrome yellow as standard for school busses. This yellow is highly visible in daylight and under headlights at night. Dim illumination does not turn it black. It contrasts strongly with highway white or black and with the blue of the sky. It is especially effective against backgrounds of snow in winter and the greens of spring and summer. The exact shade of yellow has been specified in the "Manual on Uniform Traffic Control Services for Streets and Highways" published by the American Association of State Highway Officials, Washington, D. C. Such standardization also fulfills another criterion—instant recognition. Yellow has come to be associated with school busses in the motorist's mind, and makes him extra careful.

Legislation has not, unfortunately, been enacted for further safety color standardization. A study by the Massachusetts Registry of Motor Vehicles shows rear-end collisions to be the most prevalent type of highway accident, yet no state law anywhere demands that fronts or rears of busses or trucks be painted in conspicuous colors. (Black, yellow, or white chevron stripes, with horizontal stripes for contrast would be an effective solution.)

New Jersey studies show that 6 out of 10 motor victims meet death after dark. In New York, three-fourths of all pedestrian fatalities occur in darkness. It is four times as dangerous to cross a street at night, although there is only one-third as much traffic. The average automobile, carrying 30-mile-an-hour lights whizzes along at 50 or more on America's 113,450 miles of improved but unlighted highways. Commercial Vehicles and private ones alike avoid the very colors we have shown to be the safest because less visible combinations show less dirt. (Actually, results suggest that whenever color engineering steps in, so does employee interest in keeping vehicles clean, and even the private owner takes greater pride in his car's appearance.)

More important than actual brightness of highway illumination is light which reaches the surface of the road and which picks out objects clearly. Mere high intensity which causes glare can be a real hazard.

In England, the Ministry of Transport has tried coloring highways themselves. Tests in the Channel Isles show that marigold concrete cuts down sun and headlight glare by 40 per cent. Red, green, blue, and yellow asphalt have also been tried. All colors used had positive effects in reducing mishaps, and in making pedestrians more visible at night. Colored roads correlated with maps may some day eliminate the need for route markers, and help keep driver attention on the road ahead. Best of all, adding color to concrete costs very little, and pigments are available today which do not fade objectionably.

Massachusetts safeguards drivers on some roads by making the center lane of three darker than the two outside ones. This technique is more effective visually and psychologically than the use of lines. Rough texture on the center lane makes tires hum, reminds the motorist to use it only for passing. Where curves make passing dangerous, middle lane vanishes altogether, and the remaining two lanes are divided by a wide white line which clearly says "don't cross." Especially effective against dark pavements, a yellow dividing-line has the further advantage of showing up against partially cleared snow.

Air Safety and Color

New problems confront the color engineer when he takes to the air. Blue sky, white clouds, fog, mist and heightened reflections from purer light in the upper atmosphere all present their own difficulties. It is imperative that we bring to the problem of air safety all the ingenuity and energy at our command. Correct color helps pilots spot other planes quickly, in the air, or on runways where collision might otherwise result. Color also helps rescuers locate disabled craft forced down on land or at sea.

Studies made on the use of color in aviation have already produced important conclusions. A total of 26,784 observations of paint schemes on aircraft revealed that glossy sea-blue paint applied to the trailing halves of empennage and wing surfaces improved the visibility of aluminum models more than any other scheme considered. A National Research Council of Canada found that, in the air, yellow was very bad for recognition at a distance, but that orange of a slightly reddish quality was excellent.

On planes which operate in high-temperature parts of the world, an exterior coat of white paint contributes markedly to passenger comfort and to crew efficiency and morale. In tests, painted aluminum exposed to the sun's rays remained 28 degrees Fahrenheit cooler than the same surface unpainted. In a DC 6 airplane this would mean cabin temperatures 15 degrees cooler. At Mexico City, in the spring, a painted and unpainted plane were exposed to maximum solar radiation for one hour. The cabin of the unpainted plane was 10 degrees hotter. Skin temperature of the unpainted plane was 34 to 35.4 degrees hotter.

The fact that color reflects heat as well as light has an important application to airport runways. Brilliant white runways reflect hot updrafts when surrounded by heat-absorbing low value grass-green areas. Local air-disturbances of this kind cause considerable landing hazard. Runways and roof-tops which reflect the same amount of heat and light as the grass or other surrounding cover cut down "bumpy air" around and over landing fields. Colorwise, this means we want as little light-dark contrast as possible. Fortunately, we can use certain reds, browns, or greys which have the same light-dark value as grass green, but which can still be

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(For further details, use Key # F-15 on free Inquiry Card on page 75)

seen by the pilot against the green background.

In the cockpit of an airplane it is highly desirable to have color and lighting that will assist the pilot and crew to adjust the eye to the conditions created by light inside and outside the plane. For instance, at night a black interior is desirable, so that the lighting conditions inside match those outside, and do not call for adjustment of the eye muscle as vision is shifted from interior to exterior. But the black cockpit would offer too much of a contrast to outside seeing conditions during the daytime. One compromise is to use a grey wall and ceiling, and maroon flooring, both of which darken under red lighting inside. Dials are yellow, for contrast to provide legibility. Red floodlighting of the cockpit interior is satisfactory from this standpoint of limiting contrast of visual brightness inside and outside the plane, except during electrical storms. Then, as the lightning flashes through the cockpit windows, the pilot would suffer less from lighting contrast if the plane interior were floodlighted in white.

Color and Home Safety

The qualified color engineer, who works in industry and in every phase of transportation, has also much to add to safety in the home and efficiency and progress in education. A good deal that already has been said on the use of color can be readily applied to these areas of our daily life. A poorly lighted room with a bad exposure can be made more cheerful by painting it in colors which provide harmony and increase light reflection. There will be fewer bumps, bruises, and falls when "twilight zones" are properly colored and lighted.

A flight of stairs can be made safer by painting it with colors which are not only in excellent taste but which reflect more light. Dark cellar stairs, a menace in almost every home, should be painted white with fluorescent or phosphorescent paint on the risers. Structural hazards like low door frames should be painted in colors which attract the eye of the unwary.

When children leave home for school, the color of their clothing is a factor in their safety. The United States Bureau of Home Economics advocates bright colored garments especially for children who use city streets. These bright outer garments will be highly visible to motorists when children are crossing or playing in the street. Winter clothes in bright colors are especially recommended, as vivid reds, blues, greens, and oranges are more striking to the eyes than brown, navy blues, grey drabs, and maroons against a city background. Incidentally, adults could also give more thought to visibility of clothing, particularly if they intend to walk on darkened roads at night.

In a truly modern community, a child will go, dressed for safety, to a school in which color engineering is a vital factor in his education. He will sit in schoolrooms whose colors operate to facilitate sharp vision, to stimulate mental alertness and to encourage a willingness to learn. Drab, dull, demoralizing tans and greys are being replaced by colors which eliminate glare, diffuse light properly, and exert a relaxing influence, so that eyestrain, tension, and fatigue—3 of the great enemies of education—are greatly diminished.

Carefully thought-out color engineering programs provide a psychological "change of pace" by providing variety in the color of schoolrooms. Thus at one New York City high school, the lunchroom has been painted peach (a color found to be stimulating to the appetite) to contrast with the blue-green of the other classrooms in the school. In this same high school, color engineering has been applied to the shop classes just as it was applied in industry to promote safety and efficiency.

Color has also made obsolete the old slate grey blackboard. This source of classroom eyestrain is being replaced by green boards, or as in one New York City school, with yellow boards and black chalk—an especially good combination since black on bright yellow affords maximum legibility. These changes in the classroom will mean a future generation less plagued by defective vision. What price the nation now pays for eyestrain originating in the schools is shown by the fact that 12 per cent of the graduates of West Point and Annapolis are unable to take up their commissions because of defective vision developed during the years of intensive study in badly lighted, incorrectly colored rooms of the military and naval academies!

Warning Colors

Oddly enough, a great many good ideas about color and its effect on morale and efficiency come to us from our more modern prisons. It certainly seems that the law-abiding community should not lag behind.

In all the areas we have been discussing color is used to mark fireplugs, first aid kits, emergency doors, etc. The effectiveness of such markings depends upon high visibility, but also upon standardization. Possibly red has become a danger signal for psychological reasons, but a red flag means danger today, because people all over the world have agreed to use it that way. Instant recognition is as important as high visibility. Once the color engineer has done his job, industry and the state would be well advised to reach an agreement on as many "signals" as possible.

Today, all over the nation, in production, in transportation, at home, and in the schools, color engineering has joined the fight against accidents and inefficiency. The contribution of color grows continually, as its value becomes more widely recognized and its benefits more widely understood.

From an address presented at the 22nd Annual New York Safety Convention.

Pictures by courtesy of Pittsburgh Plate Glass Co. and Pennsylvania Transformer Co.

A Versatile Sole
OIL, GREASE, CHEMICALS
FOR
Does not absorb, does not break down under attack of oils, grease, chemicals.
SLIPPING
Squeegee effect gives surefooted traction.
CUTTING
Stands up where sharp metal chips, brick-yard grit, slag and abrasive materials cut
HEAT
Efficiently insulates foot against high temperatures, as in foundries and asphalt work. Does not deteriorate under heat.

AN employee in a large industrial shoe factory had long wanted to belong to the factory's shoe testing group. This group was made up of workers whose jobs would subject their shoes to the maximum wear in the shortest time, men such as watchmen, roofers, carpenters, oilers and mechanics. Since this group was provided with shoes free of charge, membership was limited and cherished. Many of the employees tried to get into the testing group; but this worker was particularly persistent, continually telling the factory superintendent how hard he was on shoes and that he was the perfect man to give shoes and soles a quick test. He carried his insistence beyond the point of annoyance, and the superintendent finally gave him a flat turn-down.

The employee began to work on the assistant superintendent. The assistant, having just seen wear tests on a new soling, decided to quiet him. He gave him a test pair of shoes with the new soling.

The members of the test group were required to have their test shoes examined once a week. As this individual reported week after week and his shoes showed no appreciable wear, his chagrin grew and the assistant superintendent taunted him with, "I thought you said you were hard on shoes."

After six months had passed, the worker handed in the shoes saying sadly, "I guess there will be no more shoes for me. I haven't made a dent in them." The soles on this man's shoes were a special type of neoprene crepe.

Safety Factors

Similar stories of the wear and safety qualities of these soles have been reported from all over the country by workers in many different jobs. Brickyard workers advised that the soles give excellent wear even under the highly abrasive conditions existing in their yard. Milling machine operators reported the filings that lay around their machines did not cut these soles. Carpenters and roofers reported much less wear than they had experienced with other soles.

It was among roofers and carpenters that the safety factor of non-

slippage was first recognized and appreciated. These men found that when they wore shoes soled with this neoprene type S crepe sole, their feet stayed where they put them and the continuous dragging over rough abrasive surfaces did not wear out the soles. This non-slip feature is attained by the squeegee effect of the crepe corrugations. Since the type S crepe is of a plied up construction, the corrugated surface is renewed as each ply is worn through. Laboratory tests made for the Army Quartermaster Corps on many flooring surfaces, both dry and covered with water, oil and other substances, show that this type neoprene is usually better than other types of soling to prevent slipping on inclined surfaces.*

Another safety factor soon recognized was the tremendous resistance of these soles to puncture and cutting by sharp objects. With such a sole available, the soling of safety shoes becomes, like the protective toe, a significant factor in foot protection. These soles also resist extremes of heat and cold, to provide added foot comfort for the wearer; and, being neoprene, they resist the disintegrating effects that oil has on ordinary rubber soiling.

These unusual characteristics make shoes with neoprene type S crepe soles suitable for nearly every type of worker's shoe. One of the characteristics meets the prime requirement of each particular job, and the sole's long wear appeals to all workers.

When work and safety shoe designers decided to style an all-purpose shoe that could be worn for work, sport, dress or street, the rugged attractiveness of the crepe gave the shoe the desired casual look.

* The name of the manufacturer of this type sole and a copy of the Army test report may be obtained on inquiry to the Editor.

Neoprene Manufacture

What is neoprene, the base material from which these soles are made? It is a synthetic rubber produced by polymerization of chloroprene, which is made from acetylene, sulphuric acid and salt, possessing remarkable characteristics that set it apart from natural rubber and other synthetics. Chief among its properties are low combustibility and a high resistance to ozone, heat, sunlight and oils. It is a product of the research laboratories of the E. I. DuPont de Nemours & Co. Inc.

Because of its unusual properties, neoprene had been in use for some time before its adaptation to shoe soles, as insulation for electrical wiring and hose and gaskets for gasoline, gas and petroleum transmission. DuPont's chemists found that by varying regular neoprene procedures, a neoprene could be produced having the appearance of natural latex crepe but retaining all the primary characteristics of neoprene. Latex crepe, a product of Far East rubber plantations, had long been a favorite on men's and women's sport shoes. Its light

(Continued on page 69)

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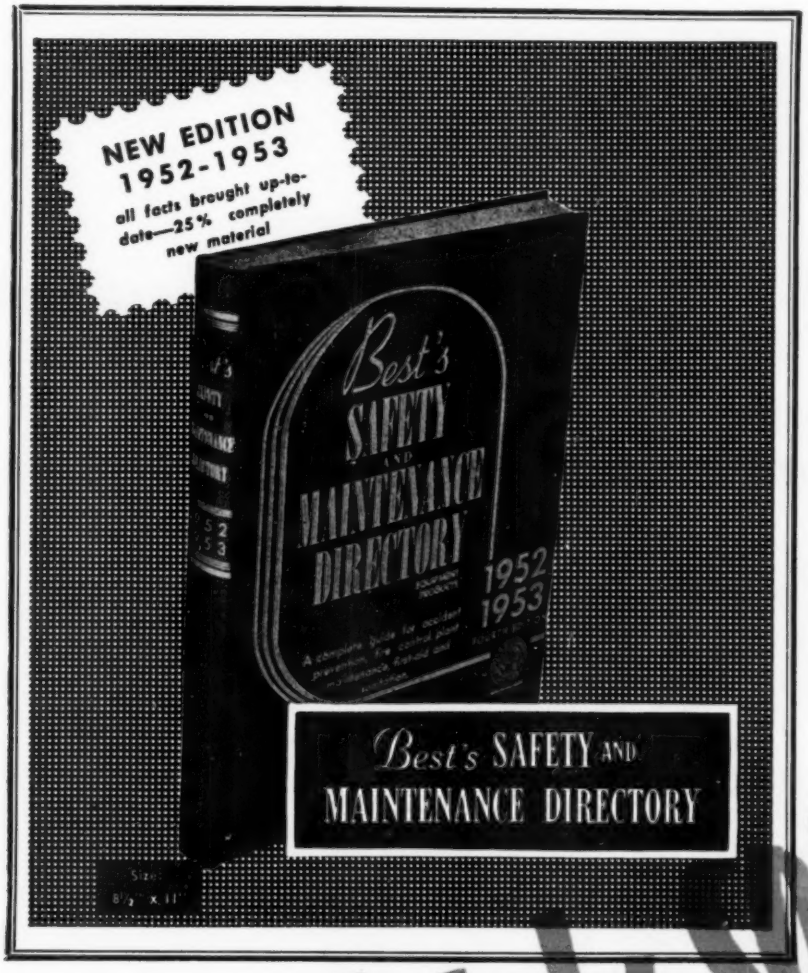

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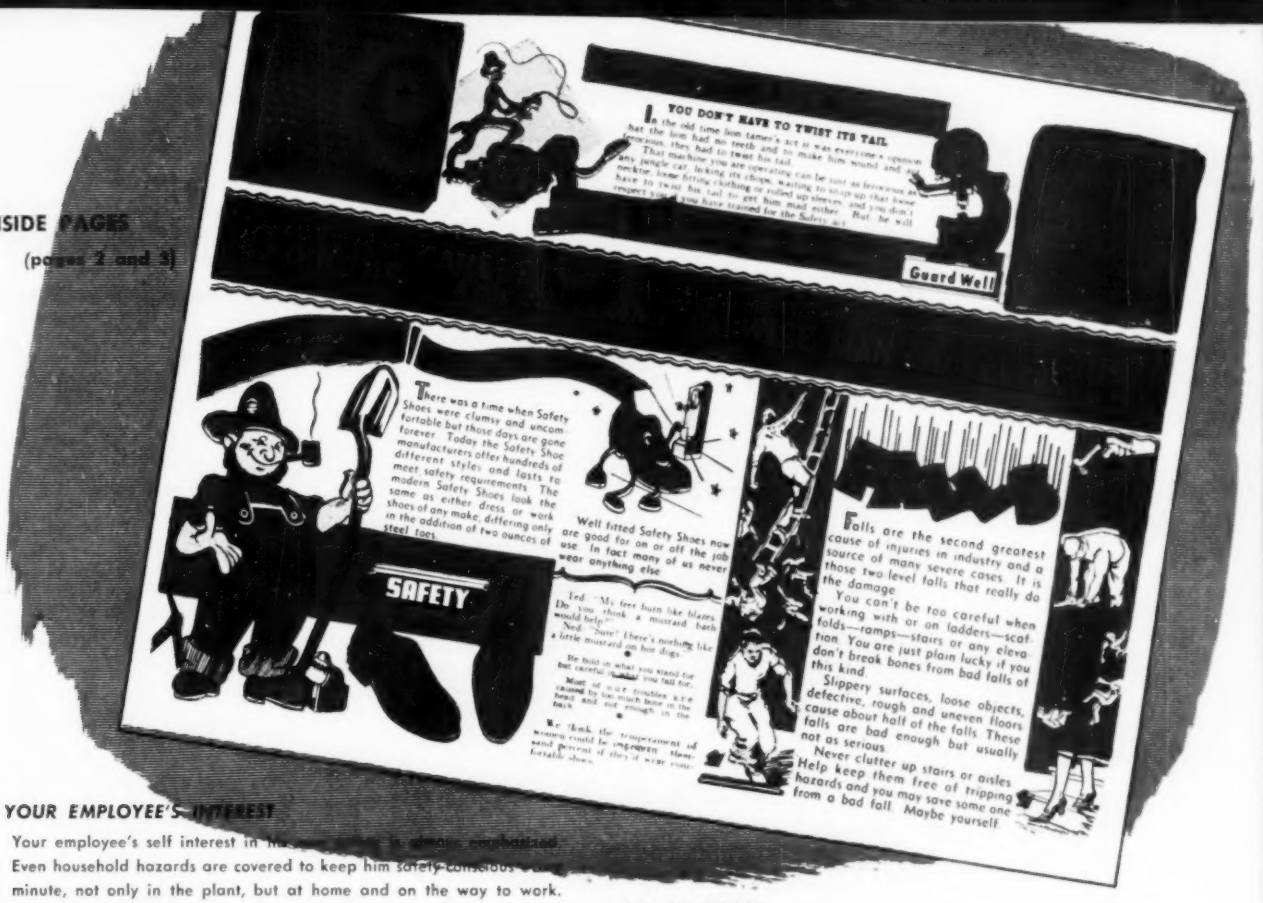
(pages 2 and 3)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Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
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Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

Clip Out & MAIL TODAY!

Leading industrial doctors advise immediate washing with plenty of running water as the best first aid treatment for any chemical in the eyes. Records prove that washing with water for ten minutes or more, close to the accident, is necessary to reduce or eliminate eye damage.

Forehead operation leaves hands free to open eyelids so water can be directed wherever chemicals might be lodged. Sanitary white baked enamel bowl is resistant to most fumes.

Over 500 industrial plant installations have been made to date.

Write For Details.

VALVE
Chain Operated
Quick Action
Self-Closing

NEW EMERGENCY SHOWER

The B & A Shower is the quickest and most satisfactory way to saturate a worker with gallons of water the instant an accident occurs, to prevent a disfiguring burn—even a fatality.

Special shower head, no holes to clog—can be used where unfiltered water prevails.

Write For Details.

GLASS SLIVERS AND CHEMICAL IN EYES!
DISFIGURING FACIAL CUTS AND BURNS!
CUTS AND CHEMICAL BURNS ON ARMS AND BODY!
THIS HAPPENS WHEN UNPROTECTED GLASS BOTTLES ARE BUMPED

NEW LOW COST B & A SAF-T-BAGS

are widely used for the safe handling of glass bottles containing harmful chemicals; also the storage and recovery of expensive serums, biologicals, and other costly products.

Painful cuts, disfiguring burns, loss of eyesight, or even a fatality, do result from corrosive liquid splash and flying glass when unprotected bottles shatter.

Write For Details.

5 PINT
1 GALLON
5 GALLON

BENSON & ASSOCIATES, INC.

P. O. Box 7542, Dept SM
CHICAGO 80, ILLINOIS

(Use Key # F-18 on card on page 75)

INSIDE THE TRADE

Rose Manufacturing Appoints

CHARLES R. EWING has been named vice president and sales manager of the Rose Manufacturing Co., according to C. W. Rose, President.

Ewing was formerly a district sales supervisor for the Aluminum Company of America. He also has held administrative, liaison, tooling and production engineering positions with the Goodyear and Northrop Aircraft Companies.

Floor Machine Association Elects

MR. ERNEST COOPER, of the Clarke Sanding Machine Company, Muskegon, Mich., has been elected President of the Floor Machinery Manufacturers' Association at its Twentieth Annual Meeting held in Chicago. He succeeds Mr. A. P. Boller, of S. C. Lawlor Co., Chicago, who has held the office for the last two years.

Among the scheduled activities for the coming year President Cooper listed a program of cooperative advertising, an effort to secure a revision of government specifications on commercial and industrial floor machines, and a committee to work out a program of activities for the commercial and industrial vacuum cleaner branch of the industry, including a revision of government specifications.

MSA Elects New Officers

ELECTION of J. T. Ryan, Jr., as president of the world's largest safety equipment manufacturing firm has been announced by the directors of Mine Safety Appliances Company.

Mr. Ryan succeeds George H. Deike, Sr., who was named to the post of chairman of the board. Mr. Ryan is the son of the man who, with Mr. Dieke, founded the concern in 1914. He was graduated from Pennsylvania State College in 1934 and received an M.B.A. degree at Harvard. He began his business career as a sales engineer with the company in 1936. In 1948 he was elected to the board of directors and named executive vice president.

Election of C. P. Rooney as treasurer of the company has also been announced. Associated with the company since 1927, Mr. Rooney is a graduate of Duquesne University with a B.S. degree in Economics. Mr. Rooney was elected assistant secretary of the company in 1940 and assistant treasurer in 1948.

30th Anniversary for Dockson Corporation

ON April 15th the Dockson Corporation, Detroit, Michigan stopped all plant operations while Harold Piggott, president of the corporation, cut a mammoth birthday cake for all the employees and officers. The corporation was established in 1923 and Harold Piggott was the first employee. The corporation is an important manufacturer of welding equipment and head and eye safety equipment.

Bausch & Lomb Elects

ELECTION of Lysle B. McKinley as vice-president in charge of Scientific Instrument Sales, and Carl A. Day as vice-president in charge of Manufacturing has been announced by Bausch & Lomb Optical Co.

Born at Pittsburg, Kan., Mr. McKinley graduated from Kansas State Teachers College in 1925. After serving as a Bausch & Lomb instrument salesman in several mid-west-

ern and eastern states from 1929 to 1942, he came to Rochester to become assistant to the chief inspector of military instruments. In 1946 he was appointed administrative assistant to the vice-president of the Scientific Instrument Division, and a year later was promoted to sales manager of the division.

An engineer, Carl Day joined Bausch & Lomb in 1931 after graduating from the U. S. Naval Academy. After a year's factory training, he joined the Scientific Instrument Sales Division. In 1942 he transferred to the Manufacturing Division where he coordinated production of optical gunfire control instruments for the armed services, including rangefinders, heightfinders, and binoculars. He was later promoted to works manager of all Rochester manufacturing, production control, and plant maintenance activities. In 1947 he established the company's eyeglass frame plant at Wellsville, N. Y., and later was also responsible for completing development of the firm's lens plant at Midland, Canada.

Syracuse Distributor for Yale and Towne

THE appointment of the Materials Handling Products Corporation of Syracuse as distributors of Yale Industrial Truck products has been announced by James H. W. Conklin, General Sales Manager of The Yale Materials Handling Division of the Yale & Towne Manufacturing Company, Philadelphia.

The main office of the Materials Handling Products Corporation is located at 2704 Erie Blvd., East, Syracuse. Branch offices are located in Schenectady and Utica.

Use the Free Inquiry Card on page 75 for details on products advertised

Scott Respirators put

breathing safety where danger used to be at

HOFFMANN-LA ROCHE

More and more plants are discovering that production work moves along with more efficiency and that down-time is kept to an absolute minimum when workers in toxic areas are assured of safe breathing with Scott Respirators.

WORKER PROTECTION PAYS OFF IN SMOOTHER PRODUCTION

Workers required to handle dangerous solvents, volatile acids and dusty, highly irritating powders in restricted areas use Scott Respirators for complete protection during exposures.

Scott Unit provides fresh air to worker washing kettle with streams of chloroform.

• Processing operations at Hoffmann-LaRoche, Inc. of Nutley, N. J.—manufacturers of chemicals and pharmaceuticals—include stages where chemical fumes create definite breathing hazards. Workers exposed to these conditions are supplied with the sure protection of Scott Respirators. No matter how hard they work, they'll always get as much cool, fresh air as they need with no fear of toxic fumes. Hoffmann-LaRoche reports highly successful results with Scott equipment. Over thirty Scott units now keep organic vapors and acid gases from damaging worker's lungs and eyes.

The company "highly recommends their use in other plants". Why not investigate their benefits to your plant safety and production?

Call your Safety Equipment Dealer today or write direct for complete information on Scott Equipment and its use in industrial operations.

Shown (right) is the Scott Air-Pak — on and ready to use in seconds. Safe protection for emergencies in dangerous, toxic atmospheres.

SINCE 1932 Scott FOR SAFETY - FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

217 Erie Street Lancaster, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities

Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

(For further details, use Key # F-19 on free Inquiry Card on page 75)

Ohio Safety Congress

NATIONALLY-KNOWN authorities in the field of safety and industrial health attracted a record attendance at the recent 23rd All-Ohio Safety Congress in Columbus. More than 3,000 representatives of labor and industry attended the convention.

Demonstrations of accident prevention methods in industry, homes, schools, farms, and traffic were presented, designed to be of practical year-round use. Teams of miners from Willow Grove, Dun Glen, Piney Fork and Jensie Mines competed for awards in first aid demonstrations under actual working conditions. The newly-developed "Back Pressure—Arm Lift" method of artificial respiration was demonstrated and explained by W. R. Middendorf, director of safety services, American Red Cross, Columbus. High school students from rural, urban and metropolitan areas presented their driver education programs. Chemical industries held a safety clinic. Re-education of injured workers, safety in chemical handling, fire-prevention and fire-fighting were among other important topics at various sessions.

New Hazards

Discussions of the dangers of atomic radiation and chemical hazards in guided missile work brought up-to-the-minute information on accident prevention in the atomic age to the Congress. In keeping with this spirit of modernity, exhibits of the latest in safety devices, equipment and clothing were given their first showing.

April was designated as Industrial Safety Mobilization Month by proclamation of Governor Frank J. Lausche, as he joined with the Congress in calling upon citizens to give serious consideration to safety problems. In his proclamation he urged all industrial and labor organizations and local and county safety groups to cooperate in an effort to reduce industrial accidents during 1953.

"Accidents suffered by industrial workers each year result in untold suffering, loss of time and earnings," the Governor pointed out. "The conservation of life, manpower and materials is vital to the health, happiness and welfare of our state and nation, especially at a time when stress is being placed on defense production."

Fork Truck Competition For Operating Safety

HERE are the details of a unique fork truck driver competition that has spelled increased safety for truck operators at the American Finishing Company, Memphis, Tennessee. It has also been responsible for decreased operating costs and equipment maintenance charges.

Each truck is assigned to a certain driver. If he is caught handling his equipment in a rough manner, or damaging material with his equipment, he is warned. The second offense means a one-day layoff. The third offense demands a one-week layoff. The fourth offense automatically calls for discharge. The second or third could conceivably call for discharge, if the extent of the damage or the employee's attitude warranted it.

When the company receives a new truck, the selection of the driver is contingent upon his safety record and his cost record of truck operation. In assigning the new equipment to the driver, the company points out the reasons for his selection. Competition is so keen for a truck job, that it takes 5 years to become eligible.

Operators are enthusiastic about the competition, and the company finds costs have tumbled. For example: the cost of operation of a single truck for an entire year, including amortized cost of the truck, is only $1358.94. In addition, it must be realized that this equipment runs in some departments during three 8-hour shifts, bringing down the average cost to $452.98 for one year for one 8-year shift per day.

The trucks have compiled an amazing record for more efficient handling. Carloading time has been slashed from 28 to 1.3 manhours; workers formerly used for this back-breaking task have been freed for more productive jobs within the company. The trucks have also increased the use of storage space 250 percent; a truck stores 54 palletized rolls in space previously occupied by fifteen.

Fire School Uses Fork Lift Truck

PHILADELPHIA firemen will learn to operate fork lift trucks found on the scene of warehouse and industrial fires as though they were a part of their own fire fighting equipment. Elmer F. Twyman, vice president of The Yale & Towne Manufacturing Company, presented a gasoline fork truck to the Philadelphia fire school, for use in training men in their operation.

At fires in warehouses and industrial plants—the kind that can grow into spectacular and expensive blazes—firemen often find their way blocked by stored materials. Often fork lift trucks and other materials handling equipment is available in the plant that is threatened by the blaze. When firemen know how to operate this equipment, they frequently can use it to remove the material blocks and get at the source of the fire. In this way, the blaze can be fought more efficiently and materials damage can also be reduced.

A materials handling expert will conduct the new lift truck operator training program at the school. This is a complete course in operation, maintenance and management.

WHAT'S NEW?

(see page 71)

Good housekeeping and good lighting make this conveyor belt area of the new Mennen plant a pleasant and safe place to work.

Safety and Efficiency hand in hand at new Mennen Plant

Twin Keys To Production

EFFICIENCY in overall production control and material handling in a toilet goods manufacturing plant has been highlighted in the design of the new Mennen plant at Morris Township, New Jersey. The new structure—which will enable the Mennen Company to double its production and warehousing facilities—opened officially on May 11th.

In all, some 55,000 square feet are devoted to manufacturing and packaging. The architectural plans were made by A. M. Kinney Associates of Cincinnati.

Among the major achievements of the design is an entirely new power manufacturing system. Under the system, control stations are set up on the manufacturing floor. Liquid ingredients such as alcohol, mineral oil, and glycerine are piped through meters to control stations. By consolidating valves, meters, gauges, push button station and other controls at the stations, several manufacturing processes can be controlled from one spot with less than the normal number of operating personnel. Such control stations in relation to large mixing and storage tanks provide more accurate and positive control, fewer required operating personnel and centralized service and maintenance.

Much thought was concentrated on determining the best materials handling equipment and the best relative master plan location of the major departments, which include manufacturing, packaging, warehousing, receiving, shipping and administration. The primary layout objective was to accomplish a minimum of materials handling, transportation and back-tracking through the various plant processes.

Product manufacturing and laboratory facilities are located in a second floor section directly over the packaging room for convenient gravity feed to packing lines below. An elevator of 12,000 pounds capacity lifts two loaded industrial trucks at once (when necessary) with ingredient material supplies from the warehouse floor to the day storage areas on the manufacturing floor.

Storage of materials in the warehouse is arranged according to type. In the interest of good maintenance, packaging materials are located conveniently near to the packaging room service bay, ingredient materials in vicinity of the elevator to the second floor manufactur-

First aid room has modern facilities for treating injuries.

Combat heat fatigue
with Morton
IMPREGNATED Salt Tablets

When temperatures soar and heat fatigue threatens your workers, be prepared with Morton Yellow Impregnated Salt Tablets.

GIVING FAST, POSITIVE RELIEF—their controlled action avoids nausea so often caused by ordinary tablets. Each salt crystal is thoroughly impregnated by a special process so that the tablet dissolves at a uniform rate, releasing just the right amount of salt to prevent heat fatigue *but virtually eliminating the possibility of nausea.*

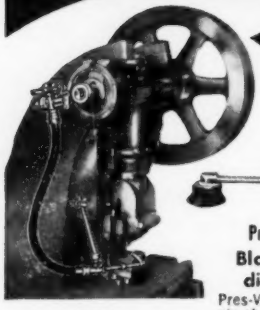
Three attractive dispensers available. A NEW, DISPOSABLE DISPENSER, a functional plastic dispenser, and a heavy duty aluminum dispenser.

Beat the hot weather—order Morton Salt Tablets now. If your local safety equipment distributor cannot supply you, write us for the name of the Morton distributor nearest your office or plant.

MORTON SALT COMPANY
Dept. ST-5 120 So. La Salle St.
Chicago 3, Illinois

(For further details, use Key # F-20 on free Inquiry Card on page 75)

LET'S SAVE All FINGERS
They're Precious . . . and Costly!



◀ Eject by *AIR* not with fingers.

Feed by *AIR* not with fingers. ▼

Keep Fingers Out of Presses!

LITTELL Pres-Vac SAFETY FEEDERS
Blanks fed from a safe distance of 14 inches.
Pres-Vac operates from compressed air at 45 lbs. pressure which passes through a venturi to create a vacuum.

AMPUTATED FINGERS COME HIGH!
Above figures are based on maximum rate of Illinois Workmen's Compensation from Division of Statistics and Research, Illinois Industrial Commission. (Figures for some states are higher.)

LITTELL AIR BLAST VALVES
Pieces forced out safely by air.
Blank parts weighing up to 2 lbs. are blown out of press with a standard Air Blast Valve.

F. J. LITTELL MACHINE CO.
Speed with Safety
AIR DIVISION
4187 RAVENSWOOD AVE.
CHICAGO 13, ILL.
District Offices
DETROIT AND CLEVELAND

Write for catalog

(For further details, use Key # F-21 on free Inquiry Card on page 75)

ing areas, and finished goods in the near vicinity of the "order make up" area and shipping docks.

Palletizing of ingredients, packaging materials and finished goods unifies handling methods and equipment and helps to prevent materials handling accidents.

Final design studies represent ideas accumulated from the management and operating staffs (including line foremen). These ideas were all incorporated to produce the most efficient arrangement accomplishing the following key requirements: efficient flow of product to and through the packaging room; protection against fire; cleanliness; ease of operation; ease of supervision; personnel safety; good lighting.

Dust-Proof Concrete Floors

Special hard-top concrete floors that do not give off dust are among the many unique features of the Mennen Company's modern new plant.

Approximately 15,000 square feet of dustless concrete floor was installed in the area devoted to manufacture of baby powder. The dustless type floor was chosen because most concrete floors give off dust under normal usage. On ordinary floors, fine particles of concrete wear off and float through the air.

According to the architects, the floor provides an extremely hard and smooth surface. Besides being easy to clean, it remains cleaner longer, thus providing an additional sanitation factor.

The dustless floor was laid at the Mennen plant by a process known as "absorption control," involving a principle of low-water cement ratio with certain minimums and maximums prescribed for the water content in making good concrete.

The most modern fire control and fire extinguishing equipment is placed at strategic locations throughout the Mennen plant.

In addition, of course, every precaution has been taken to insure the safety of personnel in hazardous areas. Special safety showers have been installed in (Cont. on page 68)

Which Chain is Safe?

CARE in handling sling chains makes them a safe and valuable materials-handling tool. Chains should be tested regularly for stretch, cuts and twists, which forecast future breaks. Charts distributed throughout the plant showing the safe working loads for the alloy chains used, and giving suggestions for using chains properly are also important aids. Here are a few suggestions the charts might contain:

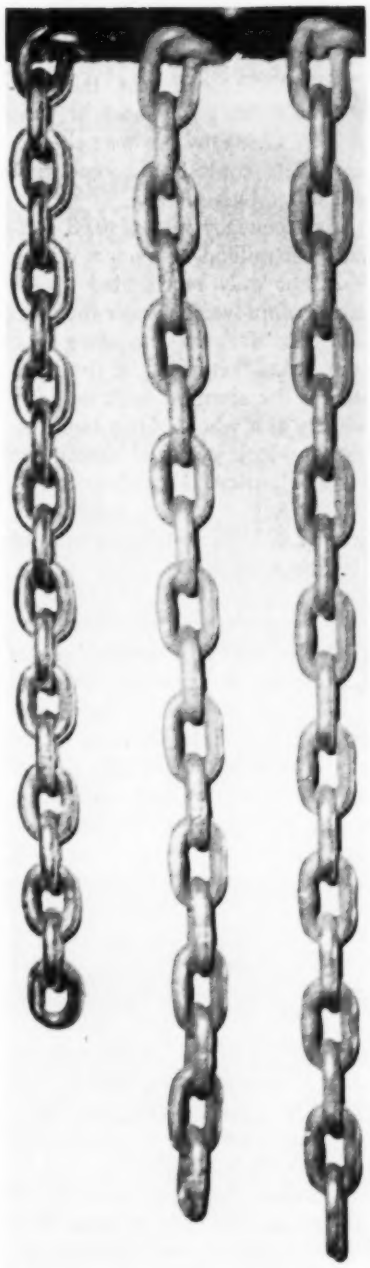
Keep chains free from twists, knots and kinks. Distribute loads evenly on all legs. Lift from center of hooks, never from point. Bull-rings and hooks must be stronger than the chains themselves. No failure gives so little indication of overstressing as failure of a bull-ring or hook. Because the chain is so much smaller, it must be fastened by connecting links which are larger than the chain.

Causes of Chain Failure

The principal cause of chain damage is overloading, by either underestimating the load being handled, or by hooking on to a part improperly. The second greatest cause of chain damage is cutting the chain metal itself, by wrapping a chain over a sharp edge of a part being lifted. Wood blocking can be used to cushion the chain and prevent it from actually touching the sharp edges.

Another cause of cut or indented links is the whipping action of a casting or other part being turned. Care in this operation can save damage. Twists in chain legs may be caused by bent links. More often, twisted links are caused by a chain being stressed with a kinked link.

It should be the responsibility of the chain inspector to detect each of these defects. A chain is lifted until its full length dangles freely to see if all hooks hang to the same elevation. Chains should measure the same length as stencilled on the marking rings. The latter are small rings, attached to the bull-rings, on which are stencilled the serial number of chains and their length.



This is what is meant by *stretch* in sling chains. The chain at left is a new one of normal size. The other two chains were originally that size too, but overloading has stretched them to the point where any link can give way. This is a danger warning.

Visual inspection is very important. A glance at the chain hanging instantly tells if the links line up. If they are out of line, there must be a bent or twisted link. Measure the openings of the hooks to determine whether the hook has been strained.

The National Supply Company's Toledo plant, which stresses the importance of care in handling chains, has adopted a program of replacing wrought iron chains with alloy as fast as repairs are needed on older chains. The reasons for the change are that alloy steel chains are two-and-one-half times stronger than wrought iron chains of the same link size. They are harder and less susceptible to cuts or other abrasions. They are flash-welded by machine, with links that do not lend themselves to kinking. They are heat-treated to a given hardness and do not require annealing; in fact, must not be annealed.

National Supply's workers are cautioned:

"Each time you use a chain, think for a minute of what is being handled; what the estimated weight is; how the hook-up is to be made; and whether your chain is large enough. If in doubt, consult your chart. Check for twists and make sure no sharp edges are coming in contact with the chain.

"The material we handle is essential and valuable, but it can be replaced. Your life or those of your fellow workers cannot.

"Be careful—save a life!"

Picture by courtesy of National Supply Company.

Gravity tests prove what many safety officials know:—

(1) Vul-Cork is lighter than any other cork-and-rubber work shoe sole

(2) Vul-Cork Neoprene is not only the lightest of all cork-and-Neoprene soles, but

(3) lighter than most plain cork-and-rubber soles.

specify

VUL-CORK

and

VUL-CORK NEOPRENE

SAFETY SOLES

Anti-Slip – won't pick up chips . . . light, resilient, flexible. Vul-Cork Neoprene resists oil, grease, acids, hot metals. Write for samples.

CAMBRIDGE RUBBER CO.
Vul-Cork Div., Taneytown, Md.
. . . makers of Vul-Cork®

(Use Key # F-22 on card on page 75)

SAFETY ACHIEVEMENTS

FOR the second year, the Harrison (N. J.) Works of Otis Elevator Company has won the annual safety contest in competition with other Otis plants.

The frequency rate of 0.68 accidents per million man-hours during 1952, not only represented an 85 percent improvement over the Harrison rate for the preceding two years, but also is far under the 10.33 rate for the elevator manufacturing industry as a whole. Only two lost-time accidents occurred during the year at Harrison. From January 17, 1952 to August 18, this works completed 2,073,762 man-hours without a lost-time injury.

EMPLOYEES of chemical plants are safer at work than they are at home or out driving their automobiles, Robert H. Albisser, chairman of the Manufacturing Chemists' Association's safety committee, reports in announcing that the chemical industry has set a new all-time safety record in 1952.

Lost-time accidents in the industry as recorded by the Association's industrial injury reporting service last year amounted to 4.10 per million man-hours worked, the lowest figure in the history of the industry and a 15 percent improvement over 1951.

This accident rate is considerably less than the 9.06 figure reported by the National Safety Council for all industry in 1951, and is lower than the 1951 rate for any industry except communications and electrical equipment. Since 1946 the chemical industry has reduced its accident frequency rate 46 percent.

Only about 1 out of 10 accidents in the chemical industry today is caused by failure of equipment or process; 9 can be traced to human error. For this reason most chemical plant managements are now placing major emphasis on safety training of employees in an effort to reduce accidents still further, according to Mr. Albisser.

THE National Constructors Association, composed of engineering and construction companies specializing in design and construction of chemical plants, steel mills and oil refineries, has awarded eight member companies for outstanding safety records in 1952.

Winners of the safety awards were Bechtel Corporation, San Francisco, Calif.; H. K. Ferguson Company, Cleveland, Ohio; Fluor Corporation, Ltd., Los Angeles, Calif.; Lummus Company, New York City; Arthur G. McKee & Company, Cleveland, Ohio; Rust Engineering Company, Pittsburgh, Pa.; Procon Incorporated, Chicago, Ill.; and Stone & Webster Engineering Corporation, Badger Process Division, Boston, Mass.

All of the award winners had sharply reduced the frequency rate of lost-time accidents during the last year.

PERFECT safety records achieved by two steel castings companies during 1952 and exceptionally low accident frequency ratings for nine others have been announced by the Steel Founders' Society of America.

Heading the list of companies cited by the national technical society were Hughes Tool Company, Houston, Tex.; and United States Steel Company, Johnstown Works, Johnstown, Pa. with perfect records for 1952. For Hughes Tool Com-

pany, the record encompassed the fifth successive year of accident-free operation. The U.S.S. unit at Johnstown previously had maintained a rating under 10.0 accidents per 1,000,000 man-hours of exposure throughout 1950 and 1951.

Closely trailing the two no-injury safety leaders, 9 other steel foundries established exceptionally low lost-time accident frequency ratings of less than 10.0.

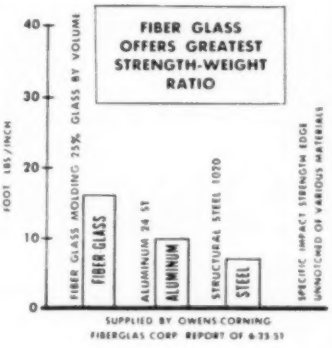
THE Peoria, Illinois plant of Caterpillar Tractor Co. has won the National Safety Council's Award of Honor for outstanding safety performance during 1952. This is the third time this plant has gained this honor.

The award was given on a basis of Caterpillar's 1952 record of frequency and severity of plant accidents as compared with par values decided by a combination of the safety records of the agriculture machinery industry for the previous 3-year period—1949 through 1951. For 1952, Caterpillar's frequency rate (number of lost time accidents per million man hours worked) was 2.8, and the severity rate (number of days lost because of plant accidents per 1000 employees) was .67. The company's frequency rate was 68 per cent better than the par value of 8.5, while the severity rate was 31 per cent below its par value of .97.

MEN and women working in General Electric's Technical Section at Hanford have worked more than 9 years recording 10,477,350 exposure hours without a single lost time injury. Accident frequency rates have always been low in the plant which produces plutonium, nuclear fuel, for the U. S. Atomic Energy Commission, but in the plant's technical section there was no accident frequency rate at all until March 30, 1953, when an employee received acid burns, and was hospitalized. Much of the credit for the record goes to safety consciousness of employees . . . and interest shown by management in observation of safety regulations and prevention of hazards.

SAF-HED-HAT OF FIBER GLASS

GREATER STRENGTH LONGER LIFE. . .



- Lightweight — Comfortable
- Rugged one piece molded seamless crown
- No warping from heat or moisture
- Not affected by Acids, Alkalis or Solvents
- Highly resilient — will not split, crack or deform
- Meets A.S.A. Code for dielectric tests
- Exceeds A.S.A. Code for impact resistance
- Cradle quickly and easily adjusted to fit all head sizes
- Attractive, steamlined appearance

U.S. SAFETY SERVICE CO. SAFETY EQUIPMENT & ENGINEERING

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto — Montreal

(For further details, use Key # F-23 on free Inquiry Card on page 75)

Purchasing Agents Asked for It . . .

HERE IT IS . . . A practical indoor-outdoor waterproof, oil, acid and sun resistant suit which meets the varied needs of all.

Detachable draw string parka hood snaps on jacket, which is available with or without snug fitting GUM Neoprene wrists. Fly front bibbed overalls. Black or Safety Yellow DuPont's Neoprene.

Write for our complete catalogue.

C. L. LOVIG CO. MARINETTE, WIS.
Manufacturers

(For further details, use Key # F-24 on free Inquiry Card on page 75)

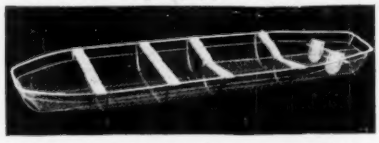
JUNKIN STRETCHERS

STRETCHER CASE

$23.80 FOB Louisville

YOUR PLANT *NEEDS* STRETCHERS

The Junkin Stretcher Case affords a convenient and compact cabinet for storing the army type stretcher, blankets and first aid equipment. It provides a definite location for the equipment and protects it against the deteriorating effects of dirt and grime. And because it's compact it's a SPACE SAVER too! Comes fully equipped if desired.



JUNKIN SPLINT-TYPE STRETCHER

Construction permits patient to be carried horizontally or lifted vertically without danger from inaccessible locations. Canvas straps and footrests keep patient rigid and comfortable. For complete information write for free descriptive literature.

JUNKIN
SAFETY APPLIANCE CO.
101 S. FLOYD ST.
LOUISVILLE 2, KENTUCKY

(Use Key # F-25 on card on page 75)

The Lightning Season Is On!

Lightning May Cause 30,000 Fires in '53

LIGHTNING will probably start fires on 30,000 American farms this year. It is expected to kill one American every day, and injure four others. No crystal ball is needed to make these predictions. These figures are averages of what has occurred in recent years.

Lightning continues to be the greatest single cause of farm and rural fires. The National Board of Fire Underwriters states that lightning causes 37 out of every 100 such fires, exacting a 35,000,000 dollar toll, year after year, on farms alone. No figures are available for the unreported or uninsured losses. Even so, authorities estimate that only about a quarter of our farm and rural property has been adequately protected.

A rural property owner may be the cleanest and most prudent housekeeper, seeing to it that every known cause of possible fire has been eliminated in and about his buildings, but without approved lightning protection on those buildings, he can be completely wiped out in a matter of minutes during an electrical storm. Continuing to run such a risk is unnecessary and foolish, especially when insurance companies will make reductions of as much as 10 to 25 percent in the fire insurance premium on an approved lightning protected building and its insured contents.

A nationally recognized Lightning Code is now in effect, compiled by the Underwriters Laboratories which gives up-to-date requirements for installation of approved lightning protection systems. Property owners contemplating the installation of a lightning protection system, should in self protection, insist on an Underwriters Laboratories approved job. How effective is such an installation? The Underwriters Laboratories state that less than one in a thousand has been reported damaged by lightning. That makes it about 99.9 percent efficient. Approved lightning protection is available in almost every section of the country. The tall unsightly points with glass balls are a thing of the past. Every effort is made to make the installation as inconspicuous as possible. The cable is coursed behind rain spouts, along the face of the rake and behind ridges. Points not over a foot high are placed on the ridges and high points.

Modern Protection

The modern lightning protection system is engineered to collect onto itself the accumulated static electricity on the building and its extended metal parts, and to discharge them harmlessly into the air. Oc-

WANTED

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casionally it may be called on to take a direct stroke to earth, which it is capable of doing.

Many older installations, which do not have the Underwriters Laboratories Master Label can be brought up-to-date at a fraction of the cost of a new job. For further information and interesting booklets contact the United Lightning Protection Association, Inc. 404 Jefferson Bldg., Syracuse 2, New York.

Picture by courtesy of General Electric Co.

Lightning Handbook

IN SPITE of the value of lightning rod systems for protecting buildings, their use has not proved as effective as possible because of a general lack of information as to the best methods of protection. To enable the public to demand installations designed for adequate protection, the National Bureau of Standards has just issued the new edition of *Code for Protection Against Lightning* (NBS Handbook, 46), sponsored jointly by the National Fire Protection Association, American Institute of Electrical Engineers, and the NBS.

Widespread ignorance regarding proper installation practice has resulted in great variations in lightning protection both of buildings and of electric equipment and, consequently, in installation of many inadequate systems. This handbook emphasizes personal precautions and protection of buildings and miscellaneous structures.

In addition to including material revised from previous handbooks, the volume contains information on aluminum as a suitable material for lightning protective systems, new rules on grain elevators and on vents and stacks emitting explosive dusts, vapors, or gases, and detailed specifications for lightning rods. It is available from the Government Printing Office, Washington 25, D. C. at 40 cents per copy. Foreign remittances must be in U. S. exchange and should include an additional one-third the publication price to cover mailing costs.

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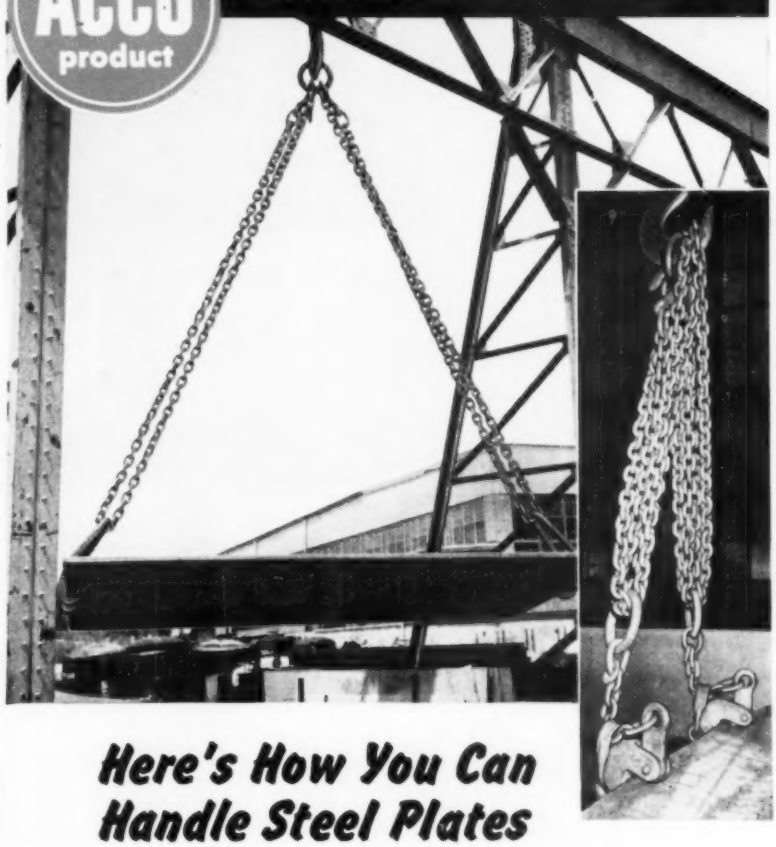

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Industrial Hygiene

Associate Editor
Jacob A. Goldberg, A.M., Ph.D.

NBS Radiation Handbook

MAXIMUM Permissible Amounts of Radioisotopes in the Human Body and Maximum Permissible Concentrations in Air and Water, National Bureau of Standards Handbook 52, is the first official published report of the Subcommittee on Permissible Internal Dose of the National Committee on Radiation Protection. It gives the most acceptable values of maximum permissible amounts of the various radioisotopes in the human body and of the maximum permissible concentrations of these radioisotopes in air and water.

Radiation Hazards

The report considers about 70 radioisotopes that are of present-day interest. Other radioisotopes will be treated in subsequent reports as data become available to serve as a basis for recommended values. Values given in this report will be revised from time to time as more biological information is obtained.

Radioisotopes may enter the body by way of food and water, in the air we breathe, through wounds and abrasions, and through pores of the skin. The physical state (liquid, solid, or gas) and the chemical form of the radioisotope help determine the type of radiation hazard and to some extent the degree of retention in the body and the magnitude of dangers.

Alert Personnel

Other important factors that determine the radiation hazard are the quantities of radioactive material involved, the facilities and equipment available for handling radioisotopes, the training and experience of those working with the radioactive material, and the respect they have for appropriate radiation protection standards and procedures.

Permissible Exposures

The report discusses in detail the methods of estimating maximum permissible amounts and concentrations, factors that determine the hazards of radioisotopes, and recommendations for avoiding or minimizing the hazards. The new 45-page handbook is available from the Government Printing Office, Washington 25, D. C. for 20 cents. Foreign remittances must be in U.S. exchange and should include an additional ⅓ of the publication price to cover mailing costs.

Air Drying Of Hands Found Most Sanitary

GOVERNMENT tests have revealed that mechanical air drying of hands affords greater sanitation protection than towels, Dr. Paul E. Walker, chief of surgical services, Public Health Service Hospital, Seattle, Wash., reports.

In the studies, conducted in surgery rooms of the Seattle hospital, bacteria contamination from the use of an electric hand dryer and sterilized towels was compared.

Dr. Walker pointed out that drying hands after scrubbing for operations affords opportunities for contamination by airborne bacteria. The tests revealed that "in the use of sterile towels these opportunities are the greatest." He added that there was "a significant reduction of gross contamination" when an air dryer was used.

FOR INDUSTRY—Several types of portable resuscitators are available for first aid rooms or, where operations cover a large

FEATURE

Third of feature series on First Aid. Preceding articles in April & May.

Automatic

FOR the general public, artificial respiration is associated chiefly with drownings and therefore receives the most publicity during the summer months when vacationists take on more water than they can handle. Actually, the importance of manual and mechanical methods of restoring breathing should be emphasized throughout the year, for drowning is only one of several ways in which oxygen is prevented from reaching the lungs. Other causes of oxygen deficiency are strangling, injury to the breathing mechanisms through sickness or accident, electric shock, crowding out of oxygen by other gases that are more readily absorbed by the red blood cells such as carbon monoxide, failure of the heart to pump blood, and air with a low oxygen content.

The most efficient method of restoring breathing is by mechanical resuscitators. They are essential for industrial first aid units, fire and rescue squads, civil defense teams and similar organizations. The value of mechanical resuscitators does not detract in any way from the importance of manual methods. Speed of application is the most vital single factor, and manual methods should be used at the earliest possible moment and continued until the mechanical equipment can be brought to the scene of the accident. Not only should emergency squads be expert in applying an approved manual method such as the back-pressure arm-lift method, but a knowledge of the technique should be disseminated as widely as possible among the general public.

There are several types of resuscitators on the market today. Following are some ways in which they are being used for emergency work, along with other types of equipment designed to speed rescue and first aid.

FOR FIRE DEPARTMENTS—Portable resuscitators restore breathing of persons overcome by smoke or gas fumes.

In Industry

The business of locating, excavating and processing phosphate "rock" is by decree of Mother Nature a scattered industrial operation. Employees of the Florida Phosphate Division, International Minerals and Chemical Corporation, work over a wide area of phosphate deposits—some distance from hospitals or other medical aid. Two-way radio and "walkie-talkie" radio-telephones had made communication faster and more efficient; modern emergency medical facilities were provided—but the need still remained for equip-

area, for transportation in emergency vehicles. At Florida Phosphate, equipment is kept in safety director's car.

Resuscitation

ment to combat respiratory failure wherever it might occur throughout the company operations.

To meet this need, the division acquired portable apparatus for automatically administering artificial respiration for victims of electrical shock, suffocation, water accidents, heart attacks and other breathing stoppages. The compact instrument, self-contained and capable of being carried by one man is kept in the safety supervisor's car, ready for instant use. It includes a 21-cu. ft. oxygen tank, sufficient capacity for practically any emergency. Two-way radio in the safety supervisor's car assures prompt response to calls from any of the division's workings or processing facilities.

The artificial respiration unit can be used as a resuscitator that "feeds" oxygen to the victim's lungs in the right amount and pressure. When a victim resumes breathing voluntarily, the unit automatically changes its function—becomes an inhalator, supplying oxygen on the patient's demand.

Controls permit setting the oxygen flow and pressure for the individual victim's requirements, infant or child or adult. An automatic signal is incorporated in the instrument to warn the operator if the patient's lungs are not getting the oxygen (as, for instance, when air passages are blocked by bits of food). Plastic oral "airways" provided with the instrument may be used to keep air passages open.

The Florida Phosphate Division maintains a wide variety of other emergency aid equipment and employees are trained under safety department supervision to use it quickly and effectively whenever and wherever the need arises. Preventive safety work has played a vital role in keeping the division's accident frequency and severity rates down to a bare minimum.

Rescue Squads

Now national in scope, and a great comfort to civilian defense planners, are the thousands of volunteer first aid and rescue squads which this year began the second quarter-century of their movement. The Belmar, N. J. squad, established in 1927 by local firemen, is a pioneer squad which came into being when a fire-fighter suffered a severe cut and it was realized that only a few of his comrades knew what to do about it.

Today the Belmar squad is at least as active as ever —last year its men and women gave a total of 94,452 man-hours to emergency first aid work—in the North Jersey shore area which is said to have fathered the

FOR RESCUE SQUADS—Automatic respiration equipment is essential for reviving victims of many accidents.

nation-wide first aid movement. Increasing popularity of the shore as a resort area drew correspondingly heavy traffic, and bathing and boating accidents climbed.

Belmar and 51 other District One squads of Monmouth and Ocean counties own about $2,500,000 worth of equipment, including four ambulances. Some emergency runs require round trips of 100 miles—as, for instance, in taking traffic or water-accident victims to hospitals. Resuscitation equipment is a vital part of the squads' apparatus.

Two-way radio is found in 50 of the 52 District One squads. Several operate jeeps as well as ambulances, using the war-born vehicles for righting over-turned cars and for off-the-road calls where ambulances cannot travel. There are a few sea skiffs and small boats, but experience has proved great numbers are not needed; if anything, there are too many vessels cluttering the scene of a water accident.

Within a few months' period, at least nine residents of West Wyoming, Pa., gained a new lease on life—thanks to the community's alert fire and police officials, and to civic-minded residents who campaigned successfully for funds to buy life-saving equipment for administering artificial respiration.

West Wyoming officials list various emergencies, including two heart attack cases, two gas asphyxia, one brain concussion, one acute indigestion, one asthma, one in which cause of asphyxia was unknown, as well as a number of non-emergency uses of the respiratory equipment, as repeated proof of the way first aid equipment and trained users have helped make their community a "good place to live longer."

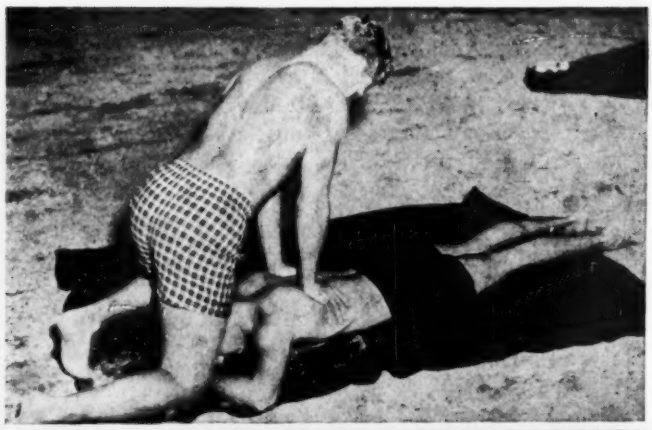
Swimming pool safety is an increasingly vital factor in modern public park management. At the three major pools in North and South Parks, and the North Park Lake, Allegheny County—which includes Pittsburgh and several dozen smaller cities and towns of Western Pennsylvania—every precaution, preventive method and safety device is used to eliminate accidents.

Lifeguards, for example, are thoroughly trained in all phases of their work. This includes instruction in giving artificial respiration. But the board of county commissioners, through the director of parks, did not let it rest there. Four instruments for automatically administering artificial respiration were purchased—one for each pool and one for the boat house at North Park Lake.

Manual artificial respiration must be applied immediately in all cases, because saving seconds will save many lives. But automatic artificial respiration is more efficient, and is used as soon as possible.

Pictures by courtesy of Mine Safety Appliances Co.

For detailed descriptions of artificial respiration equipment, see pages 243–261 of "Best's Safety and Maintenance Directory"—1952–53 edition.



Artificial Respiration Film

"SECONDS COUNT," a motion picture illustrating the new "back-pressure arm-lift" method of artificial respiration, is now available free of charge for showing to interested groups.

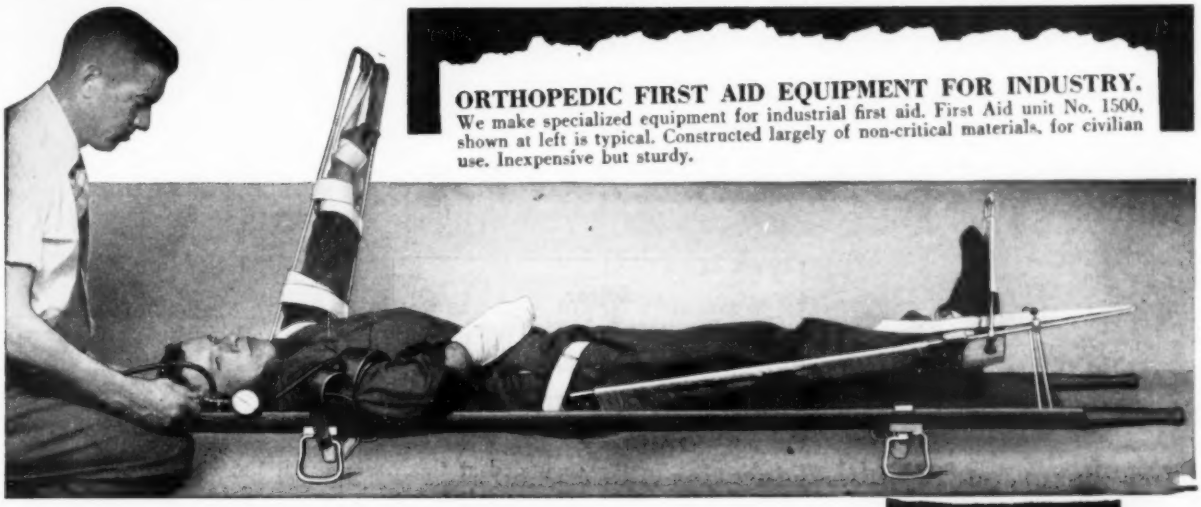
The new technique, called the Nielsen method after the Danish army captain who developed it, has been recently adopted by the American Red Cross, the Armed Forces and the National Safety Council as the most effective means yet developed for administering artificial respiration.

The eight-minute film portrays a step-by-step demonstration of the prompt and proper application of this new life-saving method to victims of drowning, asphyxiation and electrical shock, which last year alone claimed nearly 9000 lives. Instructions on changing operators, administering stimulants and preventing shock are also given.

"Seconds Count," which is produced in 16mm. with sound, may be obtained on a loan basis by contacting the Public Education Department, Aetna Casualty and Surety Co., Hartford, Conn.

LEFT:

Movie demonstrates back-pressure arm-lift method of artificial respiration. Rescuer rocks forward exerting pressure on victim's back (top photo); and then rocks backwards grasping the victim's arms (bottom photo), repeating 10 to 12 times a minute.



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Noise Analysis Standard

A STANDARD intended to help industry cope with one of its more serious problems—plant noise and the social and economic complications it creates—has just been approved by the American Standards Association. Announcement of the new American Standard Specification for an Octave-Band Filter Set for the Analysis of Noise and Other Sounds, Z24.10–1953, has been made by the Association.

The occupational hazards of industrial noise, the developing sales resistance to noisy products and the objections of communities to factory noise make the noise problem one of increasing concern to industrial engineers.

Measurements by sound-level meters are usually inadequate for the determination of damaging effects, according to Arnold Peterson, engineer of General Radio Company and a member of the ASA committee which developed the standard. It has been found that tolerable levels of noise differ according to the frequency band. Low-frequency noises, such as those produced by low-speed motors, power transformers and reciprocating engines, can be tolerated at high levels. In higher frequencies, however, tolerable levels of noise are lower.

Measurement of noise environment is best accomplished by a sound-level meter and octave-band analyzer. The new standard specifies the electrical performance of an octave-band filter set for use with a sound-level meter. It has chosen a particular set of frequencies, widely accepted for various applications, to encourage uniformity in analysis and presentation of data. No implication is intended that a series based on another arrangement of frequencies may not be equally suitable.

Further Data Needed

The background experience of one organization, according to Mr. Peterson, is not sufficient to establish adequate criteria for deafness risk because of wide variability of the noise spectrum, of the time-exposure pattern and of the relative susceptibility of different individuals. A comparison of the noise analysis with criteria proposed by a number of investigators, on the basis of an octave-band analysis, is desirable in confirming need for reduction of the noise level. This emphasizes the importance of industry-wide use of standardized measuring equipment.

Administrative leadership for the development of the standard was taken by the Acoustical Society of America. Copies of the American Standard Specification for an Octave-Band Filter Set for the Analysis of Noise and Other Sounds, Z24.10–1953, are available from the American Standards Association, 70 East 45 Street, New York, N. Y. at 50 cents per copy.

The Industrial Nurse

Editor
Rosamond J. Webster
R.N., A.M., Ph.D.

The Nurse and Health Education

THE fairly rapid turnover in the field of industrial nursing, which adds new staff members to industrial medical departments without adequate industrial nursing training, raises several questions. These relate to the recruitment of industrial nurses, especially during the current shortage of nursing school graduates; the courses of study in schools of nursing; the postgraduate or special courses on industrial nursing available in various parts of the country; and the adequacy of training in health education as applied to special problems met in industry, especially in those that present specific health and occupational disease hazards.

In many ways, the major function of the industrial nurse rests in the area of health education—even while she is changing a dressing, getting a patient ready for the physician and a physical examination, and giving advice on various personal and family problems. But unless she is prepared to carry out this educational function by training and experience, she either tends to steer clear of it, or to carry it out half-heartedly. Since specific training for industrial nursing service as broadly conceived is not made available to many nursing school students and graduates, they should find ways and means of meeting the challenges that industry presents.

Like all teaching, health education in industry requires not only a knowledge of the basic subject, but also of the employer-employee relationship, personal and family situations and how to deal with them, and many other situations. Specifically industrial health education provides opportunities for personal advice, guidance, help, and at the same time, opportunities for group teaching. As all teachers learn, some subjects can be dealt with more effectively in a group than by person-to-person contact. This is, in part at least, due to the subjective nature of many questions and problems which people are hesitant to discuss in an intimate way. On the other hand, there are obvious advantages to informal personal education. All that can be suggested at this time is that the new or recently arrived recruit to the challenging field of industrial nursing should become fully aware of the opportunities for service which industry provides through a health education approach.

Sharing Responsibility

LINES of authority and areas of responsibility are usually well-defined in large organizations with effective administrations. But in some subdivisions of even well-managed plants there may arise the desire to boss others, even if only one clerk is the person contended for.

Industrial nurses, with their hospital experience, are well aware of the need for division of responsibility. They should remember that the same lines of organization apply with equal validity in a business or manufacturing establishment. The industrial nurse may well bear the following ideas in mind: (1) It is generally not advisable for her to make diagnoses and to give medical advice. That is the proper job of a plant or family physician. (2) She should not attempt to give legal advice, but, when necessary, refer workers to the legal department, if there is one, or to the plant manager or superintendent. (3) There are certain simple or routine matters of common knowledge, relative to workmen's compensation, for instance. Informed advice on such matters may be permissible, but there should be no guesswork. (4) It is inadvisable to permit clerical workers employed in the medical department to hand out medications or to pass prejudgment on various technical subjects.

All of these belong in the domain of the physician, the nurse, the employee or the lawyer. They are not to be dangled by clerical workers or stenographers before troubled and inquiring workers. The injured or ailing worker has distinct responsibilities to his employer and fellow workers. Sometimes he is unaware of these duties. Insofar as the health area is concerned, the industrial nurse has a job of enlightenment that she cannot well avoid.

Chronic Conditions and Obesity

MUCH attention is being directed to the problem of obesity and its effect upon mortality. Many studies have shown that the mortality rates among obese people are higher than among those of normal weight. In addition, it has been found that certain chronic diseases are significantly associated with excessive weight.

In an extended mortality study carried on for some years in a section of Baltimore, records of height and weight were obtained on the population under observation. Among males the proportion classed as overweight increased markedly up to age 54. After age 55 there was a slight decrease, the proportions varying from 42 to 49 percent thereafter compared with 55 percent at ages 45–54. Females were similar to males in that the proportion of overweight persons increased markedly as age increased. However, from 65 to 80 percent of the females at ages 35 to 64 were classed as overweight compared with only 49 to 55 per cent of the males at those ages.

Both heart disease and hypertensional vascular disease were fairly common among those classified as overweight, that is all whose weight was 10 percent or more above standard tables. Many who were overweight also had arthritis. Both diabetes and gallbladder disease were found to occur with considerably greater frequency among females than among males. The data for the study indicated that certain chronic conditions occur with greater frequency in the same person than would be expected if such conditions were distributed at random in the population.

Such careful statistical studies help to throw much light on contributory factors in illness—in this instance —obesity. With such valid evidence at hand, the educational efforts of industrial nurses and others receive added support, and should be utilized in convincing fellow workers, especially those in their middle years, of the necessity for weight control and reduction when indicated.

Building America's Health

THE recommendations of the President's Commission on the Health Needs of The Nation recently became available. Discussing industrial disability, the report states that on an average working day in 1949–1950 an estimated 1.2 million persons in the labor force were unable to work because of sickness or other disabling conditions. In addition, a large number of persons of working age are not in the labor force because of some disability. Each year we lose about a billion man-days from industry because of disability.

Part of this burden, and perhaps the most preventable part, is due specifically to occupational causes. Acci-

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dents and illness recognized as work-connected account for about 10 percent of industrial absenteeism. Although the long-term trend is downward, occupational accidents increased for the second consecutive year in 1951, reaching a total of 2,100,000 injuries. These cost over $2.7 billion and included 16,000 fatalities. Small manufacturing plants with less than 25 employees have two and one-half times as many accidents, in proportion to the number of employees, as plants with 500 or more employees. Occupational diseases also cause a substantial amount of disability among industrial workers. However, since nine-tenths of sickness absenteeism is due to non-occupational causes, an industrial health program cannot be concerned solely with occupational accidents and diseases. Attention must be given to the problem as a whole.

The Commission recommended a more complete health service for the industrial worker than is to be found in many plants. This should include a complete physical examination at the time of employment; periodic examinations during employment; and investigations and corrections of occupational hazards. It should also include education for health and first aid instruction; adequate treatment, including full rehabilitation for injuries and diseases arising out of employment; and effective tie-up between medical service in the plant and all community health services for the worker and his family.

Living to One Hundred

THE increasing average length of life is a well-recognized phenomenon. The greatest gains in preventive medicine which have expanded life expectancy have occurred in the early age groups. The development and use of the sulfonamides and antibiotics during the past few years have also influenced the mortality rates of those in the later decades of life. Pneumonia, which not so long ago was a major threat to adults, has rapidly fallen before these new medical weapons. The same is true for other diseases and infections. Continued major advances can be looked forward to in the years immediately ahead.

At a recent meeting of the World Medical Association, held in Richmond, Virginia, the dean of the Harvard University School of Public Health charged that preventive medicine was still being treated as a stepchild of modern medical practice, instead of being used to prevent much needless suffering and many deaths. Following these remarks, a past president of the American Medical Association stated that "if all the data now available for preserving life were utilized in planning individual and family life, many of our citizens would attain the century mark."

Both of these distinguished physicians are aware of the social, economic, political, industrial, medical and other problems that stand in the way of achieving the ideals for which they are strong proponents and effective workers. While medical and related knowledge can achieve certain given results, we face a long period of public education in preventive medicine, medical training, the application of nutritional scientific information, and other areas before we can reasonably expect the public as a whole to take seriously the pronouncements of leaders in public health, medicine and surgery. Adherence to quack methods of self-treatment; overindulgence in food, alcohol, tobacco; ignoring of premonitory signs of ill-health; refusal to follow competent medical advice and many other factors stand in the way of achieving high health records and extended longevity among all groups. It is here that the industrial nurse can play an active part through her health education program.

The 1952 Record

THE number of injuries sustained by American workers on the job during 1952 stands at 2,031,000, according to preliminary estimates of the U. S. Department of Labor, Bureau of Labor Statistics. This figure represents a decrease of 3.3 percent from the 1951 total of 2,100,000. Injuries in manufacturing registered the only substantial reduction over previous years—the total of 450,000 being 60,000 below the fig-

ure for 1951. Minor reductions were registered in all other industrial groups except mining and quarrying and public utilities, which remained substantially unchanged. Transportation showed a slight increase.

The decrease in manufacturing injuries was accomplished in the face of a continued rise in employment, and resulted from a worker reduction in injury frequency. Reports received from manufacturing establishments for the entire year 1952 show an average frequency rate of 13.5 for the year. This is the lowest rate of any year on record, being 7 percent under the previous low of 14.5 for 1949, and is 13 percent lower than the 15.5 rate registered in 1951. The 1952 estimate includes approximately 15,000 deaths and 64,000 injuries which resulted in some form of permanent disability, such as an amputation or the permanent impairment of some function of the body. The permanent disabilities include some 1,500 cases in which disability was serious enough to incapacitate the injured persons completely for any gainful employment for the rest of their lives. The balance of the estimated injuries, some 1,932,000, consisted of temporary injuries which disabled the workers for one full day or week, but from which the injured persons recovered without any permanent ill-effects.

The 1952 injuries resulted in the loss of approximately 41,000,000 man-days during the year, which is equivalent to a loss from the labor force of 137,000 full-time workers. When allowance is made for the future effects of the deaths and permanent partial disabilities, the total economic time loss amounts to about 206,000,000 man-days—equal to a year's full-time employment of about 687,000 workers. These are huge losses and a major loss in various medical, social, and other economic aspects. Much has been done in the way of prevention. But, the job still to be done is immense.

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(For further details, use Key # F-32 on free Inquiry Card on page 75)

Personality Problems

WITH the ever-increasing interest in mental health, psychological research, personality problems, and public awareness that mental or emotional problems may directly affect physical performance, has come a growing employer interest in this field. It is not limited to what has come to be called psychosomatic medicine. Many complaining workers merely have problems that relate to members of their families, or to housing, installment buying, in-law difficulties, etc. Others have complaints which are often classified as psychosomatic.

Large companies have for some years taken these matters seriously. They have financed research projects, engaged part or full-time psychiatrists and psychologists, and sought ways and means of dealing with personality problems in related ways. One of the largest electrical equipment manufacturing concerns has for some years studied these personality problems and their effects on production. For some years one of the large department stores employed a psychiatrist to study employees who presented various mental and emotional problems. A large insurance company retains the full-time services of a psychiatrist for similar reasons. These are but samples of the way large industrial, commercial and insurance interests have approached these problems among employees.

In a recently held "Clinic on Human Relations and Occupational Health," some of the conclusions reached on these problems were: (1) attitudes affect the productivity of workers; (2) there is a relation between the job and home problems which is of concern to management; (3) a formal mechanism or plan is needed within industry to deal with the emotional problems of workers; (4) this mechanism should take account of the interests of the employee, supervisor, personnel and medical departments, and top management. Industry too often thinks of its employees as workers who operate machines, as employees who have accidents, possess special skills, or are absent from work, and all too infrequently as human beings. They have basic needs and wants. Unless these are satisfied, the workers will not be as fully efficient as their latent capacities would permit them to be if personal problems did not interfere.

WHAT A DIFFERENCE!

THIS accident happened . . . but with what a difference. It might have seriously injured men who hadn't taken the precautions that these men did. They were preparing to pack a valve on some acid equipment. They followed the safety precautions literally and were wearing rubber goggles and rubber gloves. They also had a pail of clean water nearby. All valves and bleeders had been opened. These men were well acquainted with the fact that in spite of these precautions it was possible for a very small amount of acid to be trapped in the valve under a slight pressure. They very carefully loosened the bonnet and a very small amount of acid spurted out and some of the acid sprayed on their faces. Their goggles and gloves protected their eyes and hands from injury, and the immediate use of water removed the acid from their faces so quickly, that, when they reported to the plant hospital immediately afterwards, they had only superficial burns. It is easy to say . . . "See, they were injured in spite of all their safety precautions." It is more to the point to say that their precautions turned what might have been serious injuries into minor ones.

A HELPING HAND

A MOTORIST noticed a loose shock-absorber bracket on the car ahead of him. It often happens in driving, . . . you see a wobbly tire ready to blow out, a dangling exhaust pipe or something ready to fall off the car ahead . . . but how many people tell the other driver about it? It's easier to get out of the way, forget it, or not to bother . . . the driver probably won't thank you anyway. However, this motorist took the trouble to pull alongside and tell the driver. An action like that, above and beyond looking out for your own skin, may save equipment or life.

Preventing accidents is a job far too big for any one of us, even the specialists, whose sole concern is safety; but we can prevent most of them if each of us is alert to any condition that may damage material or hurt another person. Whether it comes first or last, preventing accidents is a job for everyone.

OH NO! NOT AGAIN?

AN EMPLOYEE was injured while drilling a hole through a brick wall. A piece of steel from the burred head of a star drill dislodged and struck him in the leg. The accident report stated, under item 7, that the drill was old and had become hardened. Under item 24 of the report, it stated that all tools had been called in and burrs had been removed. Six days later another employee, working on the same job, was struck in the leg with a piece of steel which had become dislodged from the burred head of a drill. Remarks, under items 7 and 24, were identical on both reports. Just 2 hours and 45 minutes later still another employee, working on the same job, was struck in the arm when a chip flew off a drill. Remarks on the report were the same as before.

Burrs that chip off metal objects from the blow of a hammer have the speed of bullets. The penetrating power of a chip is almost unbelievable and has caused fatal injuries. Chisel and drill heads should be properly tempered and dressed as often as necessary and the cutting edges maintained sharp and square. The face of hammer heads should be smooth and dressed when the slightest fracture appears. We hope the victims of the three accidents had the presence of mind to wear goggles. Lightning may never strike twice in the same place, but accidents don't follow that pattern.

WHAT DID HE SEE? . . . STARS!

EVERYTHING was going along smoothly in the shop, when suddenly the clanging of a fire-engine was heard going past. Everybody rushed to see where it was going. One employee stuck his head out the window to get a better view. He or a fellow-worker touched the chain that holds the window open. Down came the window with a crash. The employee's head went right through the pane of glass. His nose was cut and bruised and he suffered from shock. If he had paid as much attention to what he was doing as he did in satisfying his idle curiosity, the accident would never have happened. Incidentally, the firemen put out the fire quickly . . . they knew what they were doing.

Learning . . . . . the hard way

LEFT ITS MARK

AN ELECTRIC branding-iron, thoughtlessly placed on a wooden shelf while still connected, started a fire in a chemical plant. Two heads on a supervised sprinkler system fused, summoning firemen to the plant. The quick response of the fire department and the holding action of the sprinkler system confined the flames to one wall. Too bad thoughtlessness can't be confined to the empty heads that contain it.

"IT'S REALLY NOTHING . . ."

A STILL cleaner received burns that became infected and cost him several days' work. At the end of the work period when he washed up he noticed small broken blisters on his wrist. Instead of going to the industrial nurse or even reporting them to his foreman, he treated them himself with salve. He went to work the following day, and that afternoon there were red streaks up his arm accompanied by acute pain. Then he reported the injury. He was taken to the hospital and 3 days of special care were required to curb the severe infection. The infection might have been prevented if he had reported the accident immediately. Remember you aren't a doctor and there is no shame in reporting what seems to be a slight injury. Report to a qualified person and let him decide whether it is slight or serious. He'll respect you for having the good sense to come to him and not trying to do his job.

SMOKE, SMOKE THAT CIGARETTE . . .

AN OIL worker is the victim of this story. He was waiting for a tank to be vented for cleaning, when he decided to light a cigarette. He lit it all right, but he also lit petroleum vapors being released from the tank. In the resulting fire he was burned to death.

Carelessness is inexcusable; carelessness with cigarettes is suicide. Nobody ever died from lack of a cigarette, but plenty of people have from smoking one . . . in a dangerous area.

WATCH OUT . . . IT'S A TRAP

AN inventory clerk was checking stock when he backed through a trap door, falling about 10 feet to the floor below. A trap door is well named. It looks innocent enough when it is closed, but open it is a death trap. When trap doors are open, the law requires a railing all around if there is no stairway. In the case of a stairway, there must be a rail on 3 sides and a section of hand rail should be fastened to the underside of the trap door. Some trap doors are so constructed that when they are opened a safety railing is automatically pulled in place. The falling door is a menace too. It may fall shut while a person is passing through the doorway. All trap doors must be secured open by 2 means of support.

SOMETHING FINALLY WORKED!

THE opening scene of this little comedy? of errors shows sparks from a welder's torch igniting a flammable (nobody ever did find out just what it was) that had been spilled on a concrete floor (nobody ever did find out how). The drama gets more exciting as the welder tries to beat out the fire with his gloved hands. Two new characters are introduced as two employees arrive with carbon dioxide extinguishers. Their efforts to put out the fire are in vain, because only air comes out of the extinguishers! Another employee attacks the fire with a foam extinguisher, but by this time the fire has spread and is too big for control. Meanwhile, offstage, the plant fire brigade is laying a hose from a nearby yard hydrant. The public fire department has been summoned, and firemen begin laying their own line. The climax approaches as two 50 foot sections of hose burst and have to be replaced! Sudden and unexpected denouement of the chaos, as the sprinkler system gets the fire under control. Whew! The perspiring spectator mops his brow and tries to figure out the moral of the drama. The moral is plural. Watch out for welding operations, wipe up anything spilled on floors, inspect your fire extinguishing equipment regularly (in this case the seals on the carbon-dioxide extinguishers had been broken and the gas had escaped), and don't depend on a single means of putting out fire. In this case, only one out of 5 ways worked, but it was enough.

Ladder Safety

(From page 16)

against the building walls.

Face the ladder when ascending or descending.

Do not try to repair broken or missing steps, rungs, or broken inside rails. Mark the ladder "not to be used" and install a complete new part for the broken one.

Do not splice short ladders together to make a long section.

Designate separate ladders for ascent and descent, if several men are working on a scaffold or other area reached by ladders.

Do not use the top of an ordinary step-ladder as a step.

Reinforcing wiring must be on the underside of ladder rungs or steps.

Maintain sufficient overlap with extension ladders—3 feet for up to 36 foot ladders, 4 feet for up to 48-foot ladders, and 5 feet for up to 60-foot ladders.

Do not allow workmen to pile excess material on the larger working areas of a platform ladder and overload the ladder.

Do not allow rough handling, which builds up compression failures.

For other than short ladders, additional help is needed for safe handling and carrying.

Maintenance and Storage

Ladders should be inspected frequently to see that joints between steps and side rails are kept tight, that hardware and fittings are securely attached, moving parts operate freely and that no damage to the wood itself has been done. Rope should be replaced where necessary and metal bearings of locks, wheels and pulleys should be lubricated. Painting of ladders is best done with a transparent coating to permit continued inspection. Painting may increase serviceability and reduce splintering, but it does not itself increase durability or resistance to decay. Do not let oil or grease accumulate on the rungs of the ladder. Ladders carried on vehicles should be adequately supported to prevent sagging.

Store your ladders so as to provide easy access to inspection and to prevent accidents when withdrawing ladders for use. When not in use, wooden ladders should be stored where they are protected from the elements and there is good ventilation. They should not be stored near radiators, steam pipes or other places where there is excessive heat or dampness. Ladders should be stored in a horizontal position and supported at a sufficient number of points to prevent sagging.

Wood does not deteriorate with age, when protected from exposure and decay. Wood ladders, properly selected, inspected, used, maintained and stored will have a long life and give continued service over many years.

For detailed descriptions of ladders and attachments see pages 384–399 of "Best's Safety and Maintenance Directory," 1952–53 edition.

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Helpful Maintenance Chart on Request

(For further details, use Key # F-33 on free Inquiry Card on page 75)

TRANSPORTATION SAFETY

Who Gets Involved In RR Crossing Accidents?

A COMPOSITE picture of Ohio motorists who were involved in grade crossing accidents during 1952 has been published by the Baltimore and Ohio Railroad following a study of its accident reports.

The survey produced this picture of the "typical" motorist involved in collisions with trains in Ohio: he was a male driver operating a 7-year-old sedan of one of the popular priced automobile lines; he was usually alone in the car; he lived within 20 miles of the intersection where the accident occurred.

The study, one of a number carried out by the B & O as a part of its grade crossing safety program, revealed a number of significant facts about Ohio mishaps:

(1) More than 92 percent of the Ohio drivers in crossing accidents were male. This compares with a proportion of 88 percent male drivers involved in all motor vehicle accidents throughout the nation.

(2) More than 85 percent of the Ohio motorists in accidents with trains lived within 20 miles of the crossing. Surveys in other areas show a higher proportion of drivers living near their accident scenes.

(3) Although only 12 percent of the registered motor vehicles in Ohio are trucks, 26 percent of the grade crossing accidents surveyed involved trucks. Nationally, trucks represent 17 percent of all registered vehicles and are involved in 23.7 percent of all grade crossing accidents.

(4) A high percentage of the Ohio drivers ignored warning signals and devices at crossings. In 35 percent of the cases the accidents occurred despite flashing lights, bells, gates, watchmen or flagmen. Approximately the same percentage is disclosed by national statistics of crossing accidents.

Previous studies have shown that very few expensive or new automobiles collide with trains. This was confirmed in the Ohio survey which indicated that the "average" crossing accident car was a 7-year-old, 2- or 4-door sedan in the popular price range.

In 63 percent of the accidents, the driver was alone. In 20 percent, the motor vehicle struck the locomotive or another part of the train after the train had already started through the crossing. National surveys have disclosed a higher proportion—between 25 and 33 percent—of instances in which the car strikes the train.

Causes of the Ohio collisions were described as follows:

	Percent
Reckless or negligent driving	46
Motor vehicle stalled on crossing	19
Unfavorable weather contions	8
Driver was "one-way looker," failing to check both directions before crossing tracks	7
Excessive speed of motor vehicle	7
Driver was intoxicated	3
Miscellaneous	10

The study of accident reports also produced these unusual accident causes: a stolen automobile driven at high speed by an intoxicated thief smashed into the 68th car of a freight train; a driver said he drove into the side of a train when his foot became wedged between the brake and accelerator pedals; a driver who ignored both the standard crossbuck and a watchman's stop sign to hit a yard engine said, "I saw the warning signs—I guess I was dreaming."

Speed–'52 Top Killer

MORE than 2 million casualties, the worst automobile accident toll in the nation's history, were recorded in 1952, according to figures released by a leading insurance company. Last year's traffic deaths totaled 37,600, an increase of 500 over the 1951 mark. The injury count soared to 2,090,000, more than 127,000 over 1951, the firm reported.

The most dangerous mistake in driving last year was excessive speed. Speed killed 13,430 persons and injured nearly 600,000, according to the report. Drivers under 25 years old were involved in almost 25 percent of the year's fatal accidents although they constitute only about 15 per cent of the total of all drivers. More than 15,000 persons were killed and nearly 750,000 hurt in weekend crashes in 1952. Forty percent of the deaths and 36 percent of the injuries occurred on Saturdays and Sundays last year.

The bright side of the picture shows 1952 was the second consecutive year of improvement in the pedestrian record. Figures indicate that pedestrian casualties were reduced by more than 8 percent in 1952. Crossing between intersections, "jay walking," still is the chief cause of pedestrian deaths and injuries.

Three out of four 1952 auto accidents happened to passenger cars driving in clear weather on dry roads. Eighty percent of vehicles involved in fatal accidents were traveling straight ahead. Saturday was the most dangerous day of the week to drive. 1952 was the third consecutive year of increase in the death toll.

Street Lighting Standard Revised By ASA

IN AN effort to reduce night auto traffic fatalities, an American Standard for street and highway lighting has been revised and improved.

Limited visibility, according to traffic authorities, is largely responsible for an increased ratio of night auto deaths, almost 3 times greater than in the day. Figures for 1950 indicate that the motor vehicle death rate per billion vehicle miles is 14 at night compared with 5 during the day. In addition to personal safety for motorists and pedestrians improved lighting by the new standard also is expected to expedite the movement of traffic and help reduce crime on the highway.

The standard is intended as a guide to those planning and installing lighting on public thorofares. Where improved lighting already has been installed there has been a marked reduction in night accidents, and pedestrian and vehicular traffic have been expedited, according to investigations by authorities.

The Illuminating Engineering Society is the authority for the new standard. It was developed by the society's street and highway lighting committee representing state and local public officials, representatives of lighting equipment suppliers, those who provide electrical energy, and other interested persons. American Standard Practice for Street and Highway Lighting, D12.-1-1953 is the official title of the standard which is a revision of the 1947 edition. It concludes the latest developments in lighting and takes into consideration the change in auto traffic conditions during the past 6 years. Covered in the 1953 standard are classifications of streets and highways, classifications of light distributions, a discussion of the design of street and highway lighting, and conditions requiring special consideration.

It clarifies types of light distribution to fit better the rectangular spaces involved in street width and spacing of lights. It contains more precise definitions of light distributions. Pictorial presentations are improved and new ones have been added. Tables, giving mounting heights for lights and typical layouts, have been expanded to include mercury lamps, new and larger incandescent filament lamps and new types of light distributors. There has been no change in the illumination levels recommended but clarifying notes have been added to aid in the interpretation. The section on tree trimming has been expanded. The appendices, which are not officially part of the standard, now include Computation of Roadway Illumination and Measurement of Factors in Roadway Lighting.

This revision of the earlier standard was developed under the Proprietary Sponsorship of the Illuminating Engineering Society. Copies of the American Standard Practice for Street and Highway Lighting, D12.1-1953, will be available soon from the American Standards Association, 70 East 45 Street, New York, N.Y. and from the Illuminating Engineering Society, 1860 Broadway, New York 23, N.Y. at 50 cents each.

Control Unfit Drivers To Check Accidents

A DIRECT attack on the nation's serious traffic accident problem through a 5-point program of driver control that would bar all unfit drivers from the roads has been recommended by Paul H. Blaisdell, public safety director of a leading insurance association.

Loose licensing methods and the present "post-mortem system" of determining a driver's qualifications "after the damage has been done" have proved wholly inadequate, he insists, citing the ever-growing number of dead and injured in accidents caused largely by unfit drivers.

Mr. Blaisdell says "wholly adequate" driver licensing must eventually involve these steps:

1. A physical examination which "does more than certify to the fact that the body is warm." Essential information would include a complete medical history, to guard against the dangers from epileptics and other equally unfortunate individuals who may be good and useful citizens but still not a safe risk at the wheel of an automobile. A thorough heart examination would be required as well as the testing of reflexes. Vision tests would be a vital part of the physical check-up and would cover both ordinary acuity and the equally important factors of "tunnel vision," distance judgment and color blindness. "Gone would be the days of identifying eight letters on a white card," he said.

2. A psychiatric and psychological examination to provide information on mental and emotional stability. In this area further research is needed to apply known testing methods to the driving situation and to develop new tests for would-be drivers. "Here," he added, "we must eventually be able to obtain some index of probable driver attitude. Here we must search out the self-centeredness which prefers to risk death rather than yield a right of way. If examinations for military service disclose hundreds of thousands who would be a poor gamble in the tight situations of combat for psycho-neurotic reasons, we must be equally firm in ascertaining who cannot cope with the tight situations of heavy traffic."

3. Written examination covering rules of the road, which would disclose a thorough working knowledge of traffic control "rather than the quickly forgotten surface glibness which can beat the odds in answering ten simple questions."

4. A road test of inclusiveness which might be described as "the works," in contrast with the all too frequent qualifications of: can you start, steer, stop, back up and park an automobile?

5. Periodic re-examination of all

(Continued on page 70)

The Fire Front

Review of Code for Fire Hose Couplings

HEAVY losses of life and property by fire have been prevented by a 28-year-old standard that provides for the standardization and interchangeability of fire-fighting equipment, the American Standards Association announced on the occasion of reviewing and reaffirming the standard.

The American Standard for Fire-Hose Coupling Screw Threads, B26-1925, first approved in 1925, was designed to prevent disasters resulting from the lack of such interchangeability in equipment. Its reaffirmation attests to the fact that the standard has been reviewed and found up to date and technically acceptable without revision. Widely adopted by municipalities, the standard should receive greater recognition by individual plants and buildings than it now has.

Since approval by the American Standards Association, the standard has full national acceptance by all organizations concerned with fire fighting and fire prevention. In 1942, the office of Civilian Defense recognized the importance of interchangeable fire-fighting equipment as a national defense weapon and adopted the American Standard screw thread for such emergency equipment.

Most difficult problem to solve, according to officials of the National Board of Fire Underwriters, is not the use of non-standard screw threads by municipalities. The problem lies in the many individual plants, hotels and institutions with private fire-fighting equipment, much of which still retains non-standard threads. The difficulty of locating and changing over all this private equipment is one of the principal reasons for lack of change-over in some of the big cities, NBFU officials state.

Before the standard was developed, there were numerous instances in which the fire-fighters of one city rushed to the aid of another city and found their equipment useless. Differences between the screw threads on the fire hose couplings and those on the hydrants made it impossible to attach the fire hose.

Railroad Fire Booklet

A NEW booklet entitled "Rules Governing Fire Prevention and Fire Protection" has just been compiled by the Fire Protection and Insurance Section of the Association of American Railroads and is being distributed to the chief operating officers of the member roads of the A.A.R.

This booklet was issued after an extensive canvass of the railroad industry revealed a need for a set of rules dealing with fire hazards. It is divided into two sections, with the first portion including 261 fire prevention rules covering buildings, structures and incidental equipment; electrical, gas, gasoline and oil properties; miscellaneous heating equipment, and materials, installations and practices.

The second section of the booklet lists 65 fire protection rules covering the use and maintenance of portable fire extinguishers, fire hose and fixed equipment and describing general fire protection practices.

March Fire Losses Highest On Record

ESTIMATED fire losses in the United States during March are the highest on record, amounting to $83,471,000, it is reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $83,471,000 loss represents an increase of 15.5 percent over losses of $72,254,000 reported for March, 1952, and an increase of 14.8 percent over losses of $72,706,000 for February [illegible]53). Losses for the first three months of 1953 now total $232,836,000, an increase of 7.6 percent over the first 3 months of 1952, when they amounted to $216,334,000. These estimated insured losses include an allowance for uninsured and unreported losses.

57th NFPA Meeting

THE 57th annual meeting of the National Fire Protection Association in Chicago, brought together the greatest gathering of fire protection experts in the history of the association. Fire protection men from federal, state and municipal departments, from all kinds of industry, and from all branches of fire insurance pooled their knowledge in exploring the latest and most up-to-date measures for reducing loss of life and destruction of property by fire.

The Fire Marshals' Section, made up of state, provincial and city fire marshals, highlighted the

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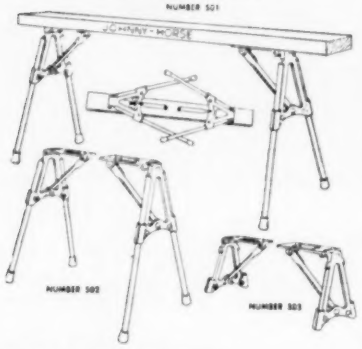

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Adjustable for height. Sturdy all-metal construction, except top timber.

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For those wishing to furnish legs and top timber, for specific need.

Safer: metal construction for strength. Ease of handling. Rubber tips prevent slippage. All fireproof except top timber.

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#1001:
Non-adjustable

#1002:
One adjustable; one not

#1003:
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(Use Key # F-37 on card on page 75)

recent serious nursing home disasters. Featured speaker at the opening general session of the convention was General Otto L. Nelson, Jr. who has recently completed an important mission as Director of Project East River. The East River Project was a critical survey of the defense of the United States against atomic attack and its findings are of vital importance to the country. The session on hazardous materials featured a report and demonstration on the "torch" sweaters which attracted nation-wide attention last fall. The session on building fires included a spectacular demonstration of the Fire Characteristics of Certain Interior Partitions by A. J. Steiner of Underwriters' Laboratories and a discussion of the Fire Protection Problems of Religious Institutions by Jules J. Lefebvre of Quebec.

A session on storage and warehousing focused attention on the series of disastrous warehouse fires of recent months.

Safety Data Sheet on Ethyl Acetate Handling

SAFETY rules and regulations for handling, storing and shipping of ethyl acetate are described in detail in a new safety data sheet, SD-51, published by the Manufacturing Chemists' Association, Inc.

The data sheet points out that while ethyl acetate is classified as a "flammable liquid," and its vapors, when mixed with air, are likely to produce explosions when ignited, the material can be handled with safety if employees are properly educated and are familiar with its hazards. The publication also includes Interstate Commerce Commission regulations regarding loading and unloading and first aid procedures to be followed in case of exposure to excessive vapors or excessive contact with skin.

Copies of the 16-page data sheet may be obtained for 25 cents from the Manufacturing Chemists' Association, Inc., 246 Woodward Building, Washington 5, D. C.

Fire School Grows

A RECORD number of 9 different fire training school classes —each lasting three days—has been scheduled by the Ansul Chemical Company on the company test field at Marinette, Wis. Last year approximately 150 students attended the school. With enrollment for each class limited to 25 persons, attendance this year is expected to reach about 225—a new record for the school—which has been operating 10 years.

Students are drawn from the fire and safety engineers of industry, from municipal fire departments and from the military services. The students are schooled in the latest techniques of fighting fires in flammable liquids and gases, using dry chemical and other types of extinguishers.

Last year approximately one-half of the enrollment was from metal fabrication or chemical companies. Representatives of the petroleum industry accounted for about 16 percent of the total enrollment, while others represented the gas and electrical utilities, the steel industry, railroads, airlines, buslines, trucking companies, the paper, food and mining industries, and the military services.

Dates for the future classes are June 8–10, June 15–17, June 29–July 1, July 27–29, August 17–19, August 24–26, Sept. 14–16, Sept. 21–23.

Begun as a service to Ansul customers, the school has been broadened to the point where fire officials and safety engineers from this country, South America, Asia and Africa have attended. After learning the latest techniques of using dry chemical fire equipment, they take this knowledge back to their home companies and pass it on, improving the level of their fire protection service. The school is conducted on the company's eight-acre fire test field, which has facilities for simulating almost every type of fire to be found in industry, including gasoline spill and pressure fires, propane pressure fires, and others.

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The most popular and accepted work hat!

Tough, laminated bakelite composition safeguards workers from every head hazard. Perfect balance, light weight results in greater wearing comfort. Available in any of the lining styles illustrated below.

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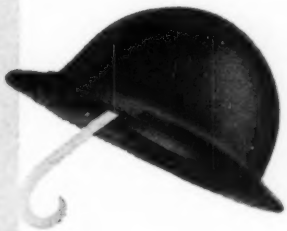
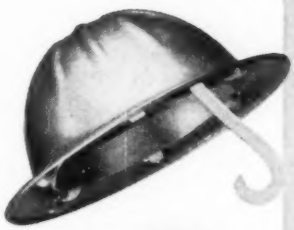
Maximum head protection in electrical-hazard areas—from high voltage contact and falling objects. Minimum protection tested at 10,000 volts. All-plastic shell—*no metal parts.* Special Web Cradle straps; one-unit leather lining.



M.S.A. GLASS FIBER HAT

High pressure molded, this hat provides perfect head protection. Smooth contour design deflects falling objects and minimizes blows and bumps. Featuring the Snap-in-Adjustable lining, this head protector comes in the following stock colors: Red, White, Yellow, Green, Blue, Gray, Black.



MODEL T ALUMINUM HAT

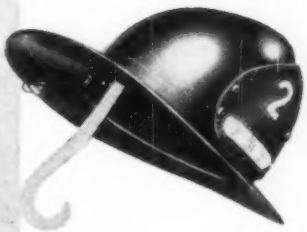
Light, cool and comfortable. Ideal for those desiring a metal hat. Tough aluminum alloy resists blows from falling or flying objects. Rigid brim protects face, neck, shoulders. Snap-in-Adjustable lining only.

M.S.A. TYPE B SKULLGARD

The Type B offers the best head protection available in cap-type style. Rigid peak, with reinforced beaded edge. Accommodates all linings except Snap-in-Adjustable.

M.S.A. COMFO CAP

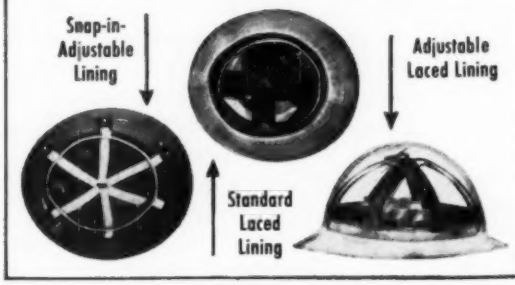
Combining lightweight comfort with head protection, the M.S.A. Comfo Cap is well-balanced, durable. Low crown design makes it ideal for low coal mining. Standard type lining only.



M.S.A. STREAMLINED FIREMAN'S HELMET

Designed for maximum head protection and freedom of movement. Laminated bakelite construction. High dielectric strength. Rubber-cushioned lining provides greater wearing comfort.

A CHOICE OF LININGS, TOO



M.S.A.'s complete line of hats and caps meets your every job, style, color, and lining needs. They are smart looking, light weight, comfortable, well-ventilated. They are designed for all service conditions, individual preferences. They have rugged strength and durability. Workers are safer, better satisfied when their head protection fits the job. Write for details.

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES COMPANY

Braddock, Thomas and Meade Sts. • Pittsburgh 8, Pa.

At Your Service: 68 Branch Offices in the United States

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Toronto, Montreal, Calgary, Winnipeg, Vancouver, New Glasgow, N.S.
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Cable Address "MINSAF" Pittsburgh

(For further details, use Key # P-34 on free Inquiry Card on page 75)

Fresh Air for Firemen

Smoke eaters no longer—Baltimore firemen now wear oxygen masks in their dangerous job. They perform their heroic rescues more quickly and easily and with less danger to themselves.

FIREMEN are getting off their steady diet of smoke, in Baltimore at least. In recent years the fire department there has developed a program that puts protective masks on firemen in all hazardous phases of their work.

The battalion chief in charge of the department's School of Instruction, sums up the progress in fireman health in one sentence. "A few years back most of the men in the department had ulcerated stomachs; since then, because of masks, less than one percent of the men suffer from ulcers."

Discussing the importance of training, he bluntly tells recruits: "When you learn to use the masks you add 10 to 15 years to your life."

It is commonplace for the School of Instruction to have as many as 6 classes of new men undergoing full-time training in fighting fires, in a 10-week course that includes hours of instruction and practice in using all types of safety equipment, with much emphasis on protective masks. So widely recognized is the value of the training that Baltimore voters have approved a projected new school to include ultra-modern facilities on a 5-acre tract at an outlay of about $400,000.

Courses cover driving, pumping, "evolutions"—that is, handling fire hose of different sizes and types in various situations—ladder work, officer training, and special subjects such as the techniques of fighting fires involving combustion of chemicals and out-of-the-ordinary materials.

Use of Masks

Great emphasis is put on the use of masks. The chief instructor insists that trainees—as well as experienced fire fighters back at the school for periodic re-training—wear masks in battling the flames and smoke that billow through the training towers. Men must learn to use their masks properly in every kind of situation they may encounter in fighting a real fire, he believes. His assistant comments: "Failure by a fire fighter to wear his mask not only hurts him but also reduces his effectiveness in rescue work and in preventing or reducing fire damage. In a smoke-filled room, when you wear your mask, it's like walking around the street in the fresh air. And you don't have to take precious time every now and then to rush to a window for air."

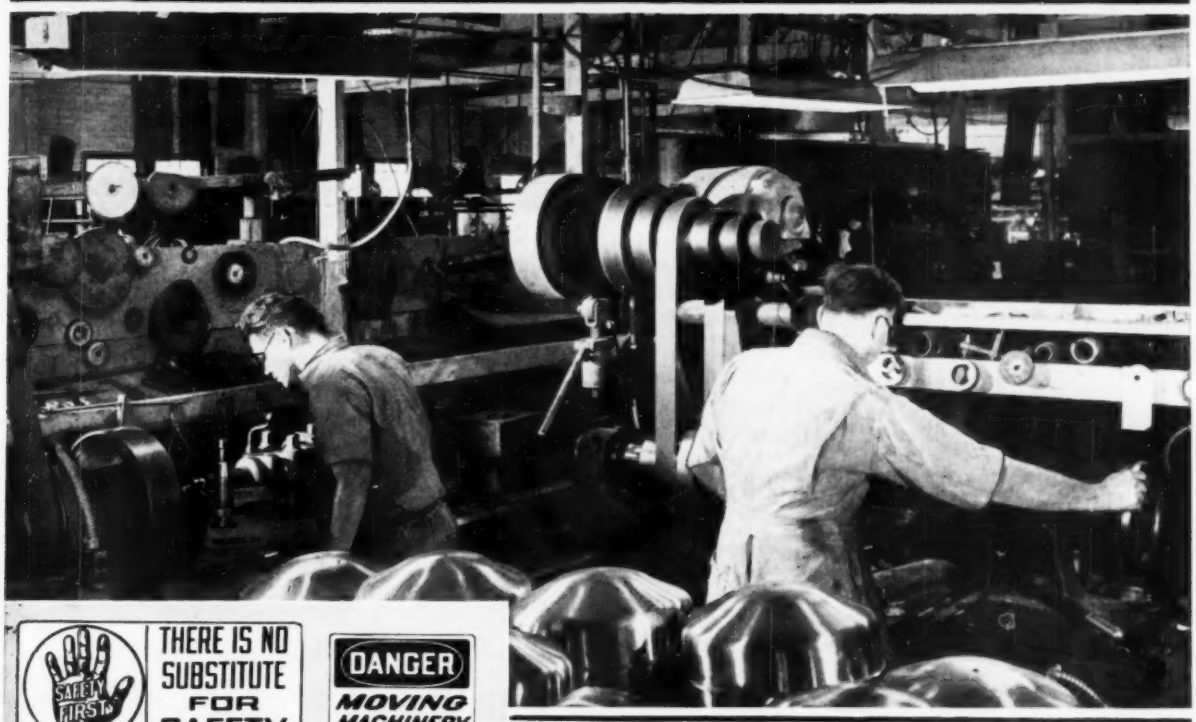
Fire fighters say that training teaches you to work properly while wearing the mask. After a while it becomes completely natural. The dangers of oxygen deficiency to a fire fighter's health and effectiveness are stressed. Many situations call for special masks that provide their own oxygen, and the department makes full use of these. Self-contained units, approved by the U. S. Bureau of Mines, are designed to permit maximum freedom of movement, even when crawling.

A dramatic example of their use was provided during the rescue of men trapped in a 48-inch concrete water line extension, 20 feet below the street. Two of the four men were overcome by fumes while they were applying molten lead to seal the joints of the water line. They were 600 feet from the nearest manhole. The other two men escaped and summoned help. The firemen, wearing self-generating oxygen units, went into the water line in two teams of two men each. When they had crawled to the trapped workers, two of the firemen served as mounts. The others pushed the unconscious victims onto their backs, and followed them out. Although the line was filled with fumes and there was water up to 12 inches deep in much of the section of line, all escaped safely.

Oxygen-Mask Rescue

In another instance recently, a fire lieutenant answered a call about two men overcome by vapors in an oil barge. When he arrived at the

STONEHOUSE SIGNS For ACCIDENT PREVENTION



Precision

Best workmanship can thrive only under favorable plant conditions. And first among these is Safety.

Where there are safe, orderly surroundings and practices, even the most highly skilled workman does better, more productive work. Shop records prove it.

STONEHOUSE SIGNS

Use them to promote safe, top production; to reduce delays and lost time—to safeguard workers against accidents. Hundreds of Stonehouse stock-worded signs are ready for prompt shipment. Where special wordings are required, we produce them to your specifications.

Our complete Catalog, in full color, is free on request.

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"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For further details, use Key # F-47 on free Inquiry Card on page 75)

scene, two fire fighters were hesitating on the deck of the barge, assuming that there was no use in trying to go below to rescue the trapped men, because of the vapors. The lieutenant donned breathing apparatus to make the rescue; one of the trapped men was unconscious, the other staggering helplessly. When the men were brought on deck they were given artificial respiration, sent to the hospital, and soon recovered.

This was a different outcome from a similar rescue attempt shortly before that, in another coastal city. Lack of such self-contained oxygen-generating equipment frustrated rescue efforts and two oil barge crew members succumbed to toxic fumes.

Through the years the Baltimore Fire Department, as rapidly as finances permitted, has built up a large supply of all-purpose masks, special masks, oxygen therapy equipment and other respiratory apparatus, so that every engine, every truck company, hose company and the rescue squad and ambulances are equipped to meet every situation promptly and effectively—with the greatest possible safety for fire fighters and for victims of fire or non-fire emergencies.

The battalion chief in charge of instruction is increasingly aware of the need for special techniques and equipment in coping with the growing variety of new materials—chemicals, plastics, fibers—being used in industry today. When they catch fire, how is one to know what toxic gases or explosive vapors may result? At one time, fires usually involved only wood or other familiar materials, but today's blazes may run the gamut of the chemistry textbooks.

He adds that there is one practical rule to follow, anyway: Always wear a mask, well-suited for the job, wherever there is reasonable doubt of the nature of the atmosphere you fight a fire in.

Picture by courtesy of Mine Safety Appliances Co.

Safety Film Awards

FOUR 16 mm. films produced last year by the National Board of Fire Underwriters have won Awards of Merit in the 1953 safety films may be booked free of charge tional Safety Council.

Three of the films, "What to Do Until the Fire Department Arrives," "How to Call the Fire Department," and "Stupid Carelessness, the Fire Clown," a color film, received awards in the non-theatrical class of general subjects. The fourth, "How to Fight Fire in the Kitchen," received its award in the non-theatrical home instructional division. All four films are five minutes long and were intended primarily for television broadcasting, but are available for showing in schools, clubs and industry. Prints of these and other fire prevention films may be booked free of charge by writing to the National Board of Fire Underwriters film library, 13 East 37th Street, New York.

WHITE FLOORS STAY WHITE

NOW with White ONEX-SEAL

A Finish that makes White Cement • Terrazzo Magnesite • Marble

WHITER

● The specialized sealing and finishing method recommended by Cement manufacturers and the National Terrazzo and Mosaic Ass'n. to preserve and maintain original color and maximum light reflection of white floors in INDUSTRY — for increased production, and reduced accidents.

No Waxing!
No Yellowing! Stops checking and efflorescence!
Makes "seeing" easier for workers!

Months of Wear! Minutes of Care!

We believe there's never been a seal that protects like ONEX-SEAL. And now Hillyard chemists, after months of work, have given original ONEX-SEAL a whitening power that avoids yellowing in bringing dirt-marred white floors to gleaming whiteness—an important factor, since discoloration in *white* cement is not only unsightly, but can decrease its reflecting value as much as 18%. ONEX-SEAL applies quickly, penetrating into the pores—and when buffed after drying has a high lustre—achieving a slip-resistant finish that needs no waxing, can be maintained "dry" with only occasional mopping. When cleaning is required use Onexite, a white pigmented neutral cleaner specially formulated for white floors.

. . . On your staff not your payroll

WRITE TODAY FOR DEMONSTRATION ON YOUR FLOORS

FLOOR HILLYARD TREATMENTS

ST. JOSEPH, MISSOURI

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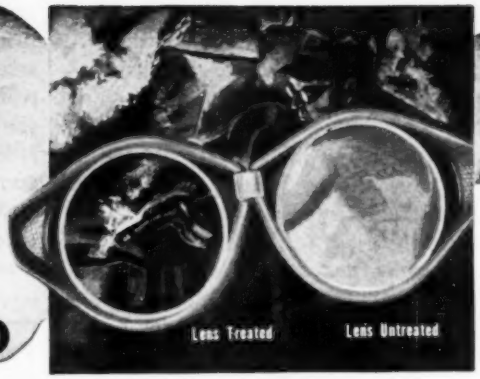
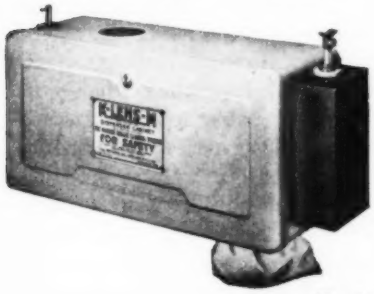
K-LENS-M
REG U.S. PAT. OFF.

Anti-Fogging **LIQUID**



Stops fogging and steaming of eyeglasses and goggles—glass or plastic. Easily applied, K-LENS-M Anti-Fogging Liquid forms an invisible coating that resists formation of fog or moisture on lens surfaces . . . brings clear vision to eyeglass wearers under severe conditions of hot steaming vapors, freezing temperatures, humid summer heat, or body perspiration . . . overcomes hazards of fogged goggles . . . increases worker efficiency and safety.



ANTI-FOGGING STATION
(Attaches Securely to Cabinet)

FINGERTIP SPRAY PUMP
(No Air Pressure Needed)

EASILY INSTALLED—SERVICED
(Locked In by Cabinet Door)

Send for FREE Sample, on your company letterhead

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Liquid Lens Cleaner
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THE WILKINS CO.
INCORPORATED

(For further details, use Key # F-39 on free Inquiry Card on page 75)

Build Better Public Relations

(From page 13)

fluence; and 3—interpretation. In analysis, an attempt is made to learn where the client stands with the public; what strengths and weaknesses exist; and what can be done to capitalize the strengths and eliminate the weaknesses. The next step is to improve existing conditions by influencing the client's behavior so that it will be compatible with the public interest. The function of the third step, interpretation, is to present the client to the public in a true light through such channels of communication as personal contacts, newspapers, magazines, radio and visual aids.

A broad definition of safety is the prevention of the results of chance by means of foresight. Highly skilled workers frequently ignore safety rules because of an overconfident familiarity with their tools and techniques. Safety is both *doing* and *knowing*.

Safety is a mental attitude best improved by human engineering. Thus the promotion of safety is largely a matter of training which fits hand-in-glove with modern programs of employee training and good-will building. Above all, safety, the prevention of accidents, is an operating problem—inseparable from all other operating problems, and solvable only by those who solve any of the operating problems of a plant—management. The safety program is the manager's bridge to his fellow-workers on behalf of the promotion of many conditions beneficial to the company. Effective supervision, employee relations, customer acceptance, public relations, productivity, service continuity, reduction of waste, and decreased absenteeism—all can be aided by a well planned and carefully administered safety program.

How is safety related to public relations? Safety may well be considered the base leg in a triangle of human relationships. The other legs are industrial relations and public relations.

Practically everything which is done in any industrial safety program has some public relations value. Today annual reports frequently refer specifically to progress in the corporation's accident-prevention program. Every petroleum industry safety engineer for instance, has been called upon to describe the accomplishments of his company in the field of industrial accident prevention to all sorts of non-industrial groups such as business, civic, church and farm organizations. Film libraries are often called upon not only to furnish films, but the necessary projection equipment and operators. The public participates in every form of industrial safety contest, including selection of a theme title, essay writing and poster design.

One of the greatest contributions

which safety has made to public relations is the bad headlines it has prevented. Thanks to the work of its safety committees, coupled with important advances in safe practices, the petroleum industry today is rated among the safest of all industries. Workers in the petroleum industry are 3 times safer on their jobs than they are in their homes. The industry's 1950 accident-injury experience, the lowest on record in its 24-year history of organized accident prevention, indicated a 70 percent improvement in frequency rate since 1927. Frequency of fires decreased to 1 fire per 148 properties. The industry's record for fire prevention is 3 times as good as the nationwide record.

One essential of a successful safety program in any industry is seriousness. This factor must be kept foremost in the employee's mind from the time he enters a plant. In addition, the serious nature of safety work must be fully realized by the highest officials of the company from the outset of accident-prevention efforts. In a large company, this means the safety department should receive the active support and cooperation of top management. This department is an important factor in our present-day concept of public relations as—management's responsibility to best serve the interest of the public, employees, customers and stockholders. To the smaller business, which may not have within its own organization the facilities of a well-rounded safety department, this means a thorough effort on the part of management to utilize the wealth of safety information, statistics and recommended practices that now exist. Rich public relations rewards might well accrue to all industries with established safety programs from making available safety services on a nation-wide consulting basis to smaller companies not able to afford their own programs.

Another essential of a successful safety program is internal and external publicity—repeated emphasis on the fact that safety work is part of each worker's daily task. Such publicity projects can take many forms; pamphlets, posters, house organs, speeches, ads, strip films, newspapers, motion pictures, radio and television.

Actually, however, safety begins on the drawing board—from the moment the design of a plant is created, from the time an operation is planned, from the moment machinery begins to be developed. If projected procedures do not adequately provide for the safety of the men who must work in the plant, lives and hundreds of thousands of dollars may be wasted.

Employee Welfare

One of the most important aspects of safety activities in the development of better public relations is that they become a symbol of the concern and care of large corpora-

New Soap Keeps Hands Germ-Free

REDUCES ABSENTEEISM

Now management can insure better health and less absence by the use of medicated soap. It looks and is used like any other soap—but what a difference Powdered Germa-Medica can make! Science has made great strides in the development of antiseptic soap which kills the contagious disease germs causing colds, flu, skin infections and other diseases which often disable employees. Hexachlorophene is the amazing new antiseptic—the first successfully incorporated in soap. Daily use gives positive protection removing up to 97% of all harmful germs. Best of all, regular use of Powdered Germa-Medica with Hexachlorophene deposits a microscopic health-protecting film of antiseptic on the skin which is always on guard against disease. Place Powdered Germa-Medica in your regular washroom soap dispensers for daily use—no other medication is needed. It's that simple to start this practical health program in your plant. It'll bring you important savings by reducing lost man-hours.

TESTS PROVE BENEFITS TO INDUSTRY

Clinical tests have shown the power of Hexachlorophene to degerm the skin, preventing the spread of disease from worker to worker. Actual use has proved the benefits of Powdered Germa-Medica in food processing plants by helping prevent the transfer of germs from person to person. Tests show that Powdered Germa-Medica will not irritate the skin. It will help to correct acne and other skin infections.

STOPS DERMATITIS AT ITS SOURCE

Where hands are
contact with
oils, Powd
Germa-M
an excel
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Available in liquid form, accepted by the Council on Pharmacy and Chemistry, American Medical Assn.

Powdered Germa-Medica

A PRODUCT OF HUNTINGTON LABORATORIES, INC.

Huntington, Indiana — Toronto, Canada

(For further details, use Key # F-40 on free Inquiry Card on page 75)

tion enterprises for the safety and welfare of their employees.

Experience has shown that the public mind is peculiarly receptive to the idea that large companies are indifferent to the welfare of their employees. Employees whose morale is low because they work in a hazardous plant discuss these things with their friends and neighbors because it is human nature to do so. On the other hand, if the safety program is effective and the workers have concrete evidence of the company's interest in the prevention of accidents, these employees will correct anyone who may tell them their company cares nothing about their welfare. In the mind of management there should never be the slightest doubt that the safety program is a valuable public relations tool—whether it be from the standpoint of employee relations, customer relations, or government relations.

Safety Dividends

In answer to the question, "How is safety related to public relations?"; it can be seen that a modern business can use both to advantage. Safety is primarily a humanitarian endeavor, the benefits of which must be reckoned first in human life and secondly in money. Safety may not always pay money dividends which readily can be seen; but, even when it does, it first pays dividends which are more precious in their intrinsic value. The safety program must stress that in the modern business world a company's obligation for the proper performance of its products does not cease when the products pass into the hands of the consumer. As an example, the petroleum industry spends millions of dollars each year in advertising and in sales efforts to attract customers to purchase its products. Once this customer relationship is established, it has great value and is difficult to sever. Much of the strength of this relationship depends on how well we do the job of teaching the customer *how* to use our products—and right here we come up against the problem of safety as a medium of public relations.

BE FRESH...
STAY FRESH
wear a DUPOR No. 10
Chemical Cartridge Respirator
Code "A" Cartridges (Soda Lime)—White Plastic for light concentrations of inorganic acid gases.
Code "B" Cartridges (Activated Charcoal)—Black plastic for light concentrations of organic chemical vapors.
Code "AB" Cartridges (Soda Lime and Activated Charcoal)—Yellow plastic for light concentrations of combined inorganic and organic gases.
Sample sent
$5.00 up
Extra Cartridges 70¢ a set
Unit has DUPOR "controlled-breathing" valves. Double filter apertures hold 50cc. capacity chemical cartridges. Soft rubber face mask gives gas-tight fit on any shape face, as well as panorama view with no blind spots. Chemical filters are packed in colored plastic cartridges that will not corrode like metal ones or crush like paper types. Unit is shipped with code "B" cartridge unless otherwise specified.
For the best in eye protection get H. S. Cover's Gas-Tight, Fog-Proof Goggles..... $2.00 pp
H. S. COVER, South Bend, Ind.
(For further details, use Key # F-41 on free Inquiry Card on page 75)

Customer Safety

Does the consumer know that we are concerned about his safety; or does he think we're interested only in his cold cash? Maybe if he stopped to think, he'd realize that safety is just good business. We don't want to sell him just once. We want him to come back and buy again. He may not be able to if our products and methods aren't safe. The customer doesn't stop to think of such things. Does he know? Have we told him?

Does he know, for instance, that in the oil business new and safer solvents have been developed for cleaning purposes or that industrial oils are now made free of substances which might be the cause of illness or accidents? Does he

(Use Key # F-43 on card on page 75)

For Safety
Guardi-Ann Hat
U.S. PATENT NO. 2,629,900
Combines utmost protection and style. Exclusive patented features found in no other hat.
Write for Free Sample or Order Direct from us
$15.00 dz.
CHIC MAID HAT MFG. CO., Inc.
630 HIGH STREET
BUFFALO 11, N. Y.
(Use Key # F-42 on card on page 75)

realize the many precautions taken in the transportation and storage of petroleum products?

It is good public relations to teach your customers the facts of life about the correct and safe usage of your company's products. As Eric V. Weber, President of Ohio Petroleum Marketers Association, Inc., points out: "We know that many of our customers do not know how to use petroleum products properly. It is not only our duty, but the soundest type of business practice, to employ every means at our command to overcome that hazard to the business ledger, and to guard against destruction of life and property."

Great benefits to the safety movement of every company will result if public relations people continue to emphasize the safety program when they discuss with top management those factors which can strengthen their public relations generally.

Remember, a company which has a reputation in its home town as a safe place to work is a long way up the ladder towards the goal of good public relations.

Pictures by courtesy of the American Petroleum Institute.

Building Exits Code

DOORS leading to enclosed stairways in schools, hospitals, hotels, office and public buildings should now be marked, "FIRE EXIT—Please Keep Door Closed." This requirement has been included in the new edition of the Building Exits Code, A9.1-1952, just approved as an American Standard.

This new provision of the code is an attempt to solve one of the particularly troublesome problems in fire protection—keeping stair doors shut so as to prevent the upward spread of fire and to safeguard the path of escape down the stairs.

The Building Exits Code, developed under the leadership of the National Fire Protection Association through the procedures of the American Standards Association, has a standing of 25 years of service in the public interest. It has gone through twelve revisions.

The Building Exits Code specifies the number, size, construction, and position of exit facilities, in order that buildings can be emptied promptly in case of fire, panic, or other emergency. It recognizes that life safety involves more than exits, and accordingly also covers stairways, fire escapes, aisles and corridors, elevators, slide escapes, alarm systems, lighting and signs.

A new requirement of the revised code is that doors be openable by a readily available, convenient, and obvious type of latch. A former requirement for panic bars on all outside doors of schools has been modified in the latest code. A change in wording now exempts from this requirement one-story schools, where each individual classroom has a door to the outside.

Insurance companies, safety organizations, government agencies, fire protection groups, architects, technical and trade associations, and groups representing theaters, hospitals and hotels are represented on the ASA committee which developed the Building Exits Code.

Copies of the Building Exits Code, A9.1-1952, are available from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., and from the American Standards Association, 70 East 45 Street, New York, N. Y. at $1.00 each.

Twin Keys

(From page 38) the laboratory area for minimizing the effect of flash fires or burns from acids or alkalies used by laboratory technicians.

Safety shoes as well as other personal protective equipment is provided to safeguard employees against injury.

A modern first-aid room with latest diagnosing and treatment facilities is provided by the Mennen Company. A full-time doctor and experienced industrial nurse are on duty at the new plant which is a model of safety, cleanliness and efficiency.

Versatile Sole

(From page 30)

weight permitted a rugged, thick appearance without adding the weight of ordinary soling.

DuPont first offered this raw material to the soling industry in 1944. The first practical shoe bottom was developed a few months later. Shoe makers adopted it enthusiastically; and, as its safety features have become known, it has been put in wide use as a sole for safety shoes.

The development of neoprene for shoe soles is another step in providing workers with safe clothes to wear as well as a safe place to work. The soling industry continues its trials of all new materials in a quest for safer, longer wearing soles. The Neoprene Type S crepe represents one of the soling industry's most important achievements in this quest.

Pictures by courtesy of Bearfoot Sole Co., Inc.

Answers to Safety "IQ" on page 19

1. Wrong, because the man in front is taking a chance on getting his foot caught under the truck.

2. Right, because the driver has the load down and can see where he is going.

3. Wrong, because wires like these out in the aisles can be booby traps for unwary walkers.

4. Right, because the operator is wearing safety glasses even though there is a guard on the grinder.

5. Wrong, because hazards like open drawers and stools make obstacle courses of aisles.

6. Right, because the press operator is lifting the weight with his entire body instead of just the back muscles.

7. Wrong, because dashing for the cafeteria at lunch might save a few seconds but could lose several hours or days from the job, if the haste led to a fall or other accident.

8. Right, because a proper type of fire extinguisher is being used on electrical equipment.

step up to the

..safety level....

Dayton Safety Ladders pay their own way. The "safety level" working platform makes high jobs "ground-safe" — helps prevent costly ladder accidents. Check the "big 6" features that make Dayton your best buy.

1. Rail guarded "safety level" platform.
2. Locks in place automatically.
3. Rubber safety shoes.
4. Light weight—great strength.
5. Economically priced.
6. Complete size range 3' to 16' in height.

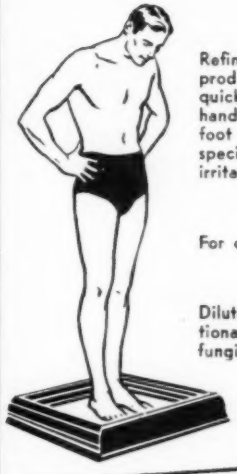
Write Dept. G for Bulletin

Dayton *safety* **ladders**

Dayton *safety* **ladder co.**
2339 Gilbert Ave. CINCINNATI, O.
In Canada
SAFETY SUPPLY CO., TORONTO

(For further details, use Key # F-45 on free Inquiry Card on page 75)

COMPLETE PROTECTION AGAINST ATHLETE'S FOOT
at moderate cost!



***IMPROVED* ALTA-CO POWDER**

Refinements and improvements in essential ingredients and production methods make Dolge's famed ALTA-CO more quickly soluble, more agreeable generally and better to handle. Dissolved economically in water for the all-important foot bath, ALTA-CO kills *in less than a minute* all different species of fungi commonly found in Athlete's Foot. Non-irritating; harmless to towels.

ALTA-CO FOOT POWDER

For dusting feet after shower or other exposure to moisture.

H.D. FUNGICIDE FLOOR WASH

Diluted 1 to 300 in water, this powerful wash provides additional protection against Athlete's Foot on surfaces where fungi are commonly found.

Ask your DOLGE SERVICE MAN about money-saving offer on the DOLGE FOOT TUB.

FOR
FREE SANITARY SURVEY
OF YOUR PREMISES
SEE YOUR DOLGE SERVICE MAN

dependable **DOLGE**
WESTPORT, CONNECTICUT

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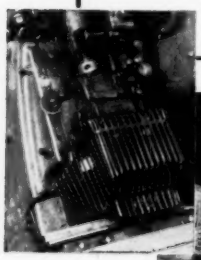
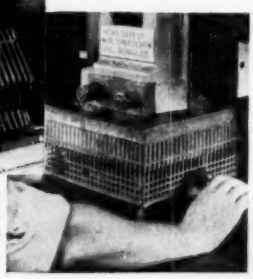




Also think of H & K Standardized Safety Guard Parts for gear and belt protection.

H-&-K

PERFORATED STRIPS

—make this request so easy to fill—Mr. Boss. From our standard steel strips, 5 and 6" wide with slots ⅜" wide, your own maintenance man can easily and inexpensively form guards to fit any punch press. Sheets with multiple rows of slots or combination of slots and squares are also available. Permit us to send you full details.

The Harrington & King Perforating Co.

5624 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

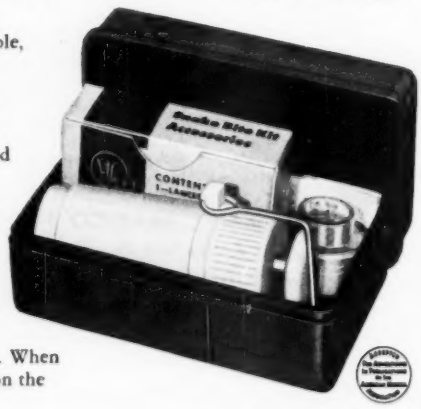
(For further details, use Key # F-35 on free Inquiry Card on page 75)

MSCO® **SNAKE BITE KIT**

when the snake strikes...you have 10 minutes!

...this requires dependable, controlled suction to prevent the poison from spreading. In the New Improved Saunders* Kit, all components are packed for quick, easy use. Only the Saunders* pump carries a performance *guarantee.* Easy to operate by the victim alone if necessary. FITS ALL STANDARD UNIT TYPE FIRST AID KITS. When advisable can be carried on the person in belt pouch. Write for details.

*Patented



Accepted for advertising in publications of the American Medical Association.

Medical Supply Company

"It pays to buy—from Medical Supply"

ROCKFORD, ILLINOIS • IN CANADA, IT'S SAFETY SUPPLY CO.

(For further details, use Key # F-36 on free Inquiry Card on page 75)

(Continued from page 58)

drivers "necessitated by the obvious fact that the proven ability to operate a motor vehicle at age 17 is no guarantee that the same ability will prevail at age 47 or 57 or 67."

Wet Roads Require Driving Technique

ROADS wet by summer rains require a special driving technique —one that goes far beyond a heavy foot on gas and brake pedals and a quick hand on the wheel, according to a trucking industry official.

J. T. Outlaw, Executive Vice President North Carolina Motor Carrier's Association, says that, in working with drivers of commercial vehicles, he found a large percentage of summer-time accidents result from drivers blundering into situations where they have to stop or turn suddenly. On slippery pavements, that can't be done.

"Always remember," Mr. Outlaw warned, "that the control of your vehicle depends on the friction between the tires and the road, and when that friction is reduced, you've got to drive accordingly."

Dangerous Skids

He explained that on slippery roads, sudden stops and turns set up forces which are greater than the friction controlling the car's path. The result is a skid.

Tests show that the maximum amount of traction is obtained just before the tires begin to slide, therefore drivers should avoid stopping the wheels altogether. To obtain the best possible stop on slick roads, Mr. Outlaw advised drivers to "pump" their brakes; that is, apply and release them rapidly and repeatedly. This procedure lessens the danger of locking the front wheels and losing all steering control.

The professional driver also keeps his engine in gear as long as possible when stopping, because his wheels can't turn any faster than the engine turns, relatively speaking.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

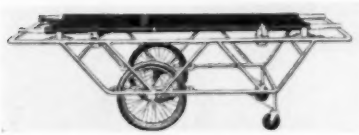
MOVABLE FIRE PARTITION

(Use Key # 756 on Inquiry Card on page 75)

A MOVABLE steel fire partition, approved by Underwriters Laboratories, is announced by Virginia Metal Products Corporation.

The partition successfully withstood a temperature of 1700 degrees Fahrenheit for one-hour and the impact, erosion and cooling effects of a hose stream of 30 lbs. pressure per sq. inch discharged for 1 minute through a 1⅛ inch discharge tip 20 feet from the wall without allowing the water to pass. Called the Mobilfirewall, the partition is designed to meet the need for a 1-hour fire partition in storage areas and other special areas in public buildings, schools, hospitals, laboratories, communication companies, factories and other buildings.

The wall forms an homogeneous unit that can be moved when the floor plan is changed. Soap and water are the only cleaning agents needed, the manufacturer reports. This wall can be placed or removed without the debris, dirt or noise common to the replacing of plaster walls. It is constructed of cold-rolled steel, and the insulation is rockwool.



STRETCHER CART

(Use Key # 757 on Inquiry Card on page 75)

A NEW style stretcher cart is now being made by the Davis Manufacturing Co. The cart's design enables one man to transport an injured person. Suitable for moving persons from the scene of an accident or for general medical institution use, the cart has 20-inch, zero-pressure rubber tires for travel over rough ground or floors. The stretcher rests on 2 cross members suspended by eight 200 lb. test coil springs. The frame is 1-inch cadmium-plated steel tubing. Length of the cart is 96 inches and height 26 inches. Weight is 65 lbs. The cart may be hung on the wall when not in use, and can be furnished with a government-approved stretcher, if desired.

ANTI-FOG LENS CLOTH

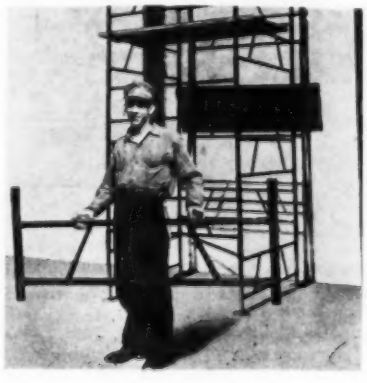
(Use Key # 758 on Inquiry Card on page 75)

A NEW anti-fog and lens cleaning cloth has been developed by Carol Chemical Products Corp., for use on glass or plastic surfaces, to prevent the formation of fog or steam on eye-glasses, windshields, windows, mirrors, etc., caused by body heat, humidity or temperature changes. By simply wiping the surface to be treated with the impregnated NO-MIST cloth, the object is both cleaned and fog-proofed in one quick, easy operation, eliminating the need of liquids, tissues or cabinets. Packed in individual plastic bags, the cloth can be carried in the pocket.

ONE-PART SCAFFOLDING

(Use Key # 759 on Inquiry Card on page 75)

MAJOR savings in scaffolding cost and erection time are promised by a new steel scaffolding system, announced by Brainard Steel Division of Sharon Steel Corporation. The new product is designed to provide maximum safety for workers in plant maintenance, building repairs, construction, etc., as a slip-fit design eliminates nuts, bolts, pins, or other fasteners, and load is carried by vertical members.



The scaffold has only one basic part, a standard tubular steel frame; yet, with a very few accessories, it is said to cover the full range of scaffolding applications. Four of the standardized frames form a 5-foot-square section 4 feet high; and multiples of such sections form towers, long runs of scaffolding, or any structure desired. The slip-fit design permits one frame to be inserted into another frame. No tools are required for erection.

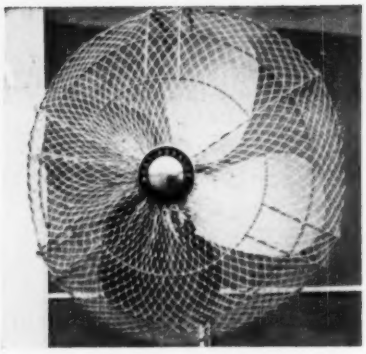
Company officials state that costs to the user are substantially cut by the standardization of parts, which simplifies ordering and inventory problems as well as speeding erection. In addition, the compact design permits stacking in a small space and simplifies transportation.

CONTAINER TILTER

(Use Key # 760 on Inquiry Card on page 75)

THIS new tilter, designed to meet the needs for a smaller, more simplified, less expensive unit suitable for handling 5 and 6½ gallon containers is announced by General Scientific Equipment Co.

The makers say it prevents accidents caused by spilling, splashing and carelessness in pouring liquids. A chain is provided to hold the container in position when tilted. The pouring spout assures a smooth flow without spurts or splashes. Made of acid-resistant rubber and plastic tubing for longer life. Fits openings from 1" to 1⅜", with a flow capacity of slightly more than 1 gallon per minute.



FAN GUARD

(Use Key # 761 on Inquiry Card on page 75)

A FAN guard which will not allow the entry of a ½" steel ball thrown at the fan, is announced by the Rochester Safety Company. The guard also protects against paper clips and other dangerous objects which could become entangled in the fan blades. The special Saf-T-Fan Gard also prevents hands from entering the revolving fan. Adjustable to fit odd-size fans, the guard is available in standard diameters of 10", 12", 14", 18", 25", 28", and 34". For further details, use the free inquiry card at the back of the magazine.

SPRINKLER PLUG

(Use Key # 762 on Inquiry Card on page 75)

A SPRINKLER head that has "let go" as the result of a fire or because of mechanical trouble can be shut off by inserting a new plug, the "Sprinkler-Stopper," designed for this purpose by the Sprinkler-Stopper Sales Co. Sprinklers can be closed to minimize property damage in areas where a fire has been extinguished without shutting off the complete sprinkler line at the main valve. The unit carries approval No. 932-49-SA by the Bureau of Standards and Appeals of New York City.

The unit head is wedge shaped and contains a spring backed plate and a neoprene diaphragm, the latter to cover the outlet. Sufficient pressure can be applied to completely close the outlet by inserting the wedge in the sprinkler head ring. A socket handle mounts the wedge on a swivel so it can be set for upright or pendant sprinkler heads. The handle portion of the assembly fits a rod or pole supplied by the user.

DOOR OPERATOR

(Use Key # 763 on Inquiry Card on page 75)

THIS electrically-actuated device provides safety in opening and closing different kinds of doors—swinging, folding and sliding. While mechanical trip and hand operation of doors are possible, the chief ways to operate the device, called Air-Lee are by magnet switch, driveway plate switch and photo-electric cell. Once set into motion electrically the device operates by air and springs. It has a safety halt before closing or opening completely and will not be damaged if it hits an obstruction, because operating forces are elastic and can reverse without strain.

Produced by the Schoelkopf Manufacturing Company, the device eliminates the hazards of heavy doors closing on employees. It can be adapted for fire doors, and cuts fatigue by making doors easier to open and close. Once door is put in motion by pressing switch, workman can still stop door with hand safely, and safely start it again by simply pressing switch. It is also called a time and heat saver and an aid to air control.

NEW FLOOR-MARKER

(Use Key # 764 on Inquiry Card on page 75)

AN INNOVATION developed by H. C. Sweet Company engineers for the company's Florline Marking Machine is a third retractable wheel which acts as a line guide 18 inches forward of the carriage. Not only does the 3-wheeled suspension make operation easier, but the advance guide wheel keeps the machine "on the track" long before line marking begins. The arm on the guide wheel automatically folds back when coming to a curb or wall, permitting the machine to continue right up to the barrier. Curved lines are made by turning the machine in the desired direction and deliberately steering the guide wheel to the right or left. An important feature is the ability to raise the handle of the machine and lift the brush to roll the marker on 3 wheels to other areas without lifting the entire machine. All wheels are of oilite bearing construction for long life.

The device, although built of heavy

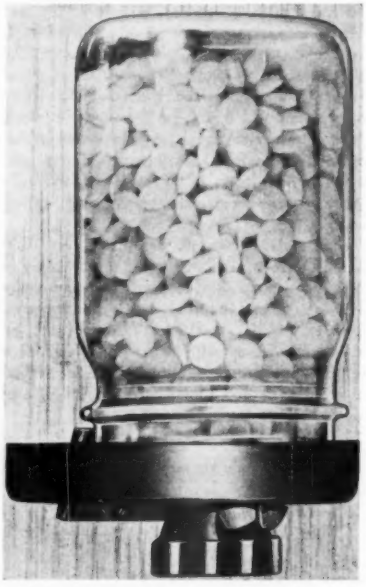
gauge metal, is streamlined to operate around and close to machinery and stock. This is of great advantage in plants where estimates show it costs $5 an hour to move stock and material to lay down lines.

PLASTIC-COATED GLOVE

(Use Key # 765 on Inquiry Card on page 75)

DEVELOPMENT of a heavy duty plastic coated work glove that is said to outwear regular plastic as much as 2 to 1 is announced by Edmont Manufacturing Company. The new coating, called "Durox," is used exclusively for the company's new glove line. It is produced by impregnating regular plastic coating with a special compound. The result is a tough-tempered, long wearing coating that is said to look and feel like leather.

In addition to long wear, the glove has remarkable *wet-grip* qualities that make it outstanding for handling materials or tools that are coated with oil, grease or other slippery agents, according to the manufacturer.



SALT TABLET DISPENSER

(Use Key # 766 on Inquiry Card on page 75)

THIS dispenser offers dependable service in factory, shop or office. New, different, economical, sanitary—95% glass and plastic, it is strong, simple and foolproof, according to the manufacturer General Scientific Equipment Corporation. The dispenser holds 750 ten-grain salt tablets. Visibility invites consumption and avoids man-hour loss. Heat fatigue and loss of body salt due to excessive sweating affects the worker and his work. Slow-downs due to the need for vital salt replacement can be avoided. Everybody requires more salt in the summer months, and anytime where their work makes them perspire. If this loss of salt is not made up, we become fatigued and may be prostrated from heat.

FLOOR MARKING APPLICATOR

(Use Key # 767 on Inquiry Card on page 75)

A NEW, light-weight applicator for applying lane marking tape to industrial and commercial floor areas, is announced by Minnesota Mining and Manufacturing Co.

Tradenamed "Scotch" brand lane marking applicator, the new unit is designed to semi-automatically apply strips of plastic film tape to mark trucking lanes, aisles, storage areas, and safety zones on floors.

Formerly two maintenance men were needed, and the job required two operations—first laying the tape, then rolling it firmly in place. With the new applicator, only one man is needed, and the tape is applied and rolled in a single step.

To use the new tandem wheeled applicator—consisting of one guide, and one pressure wheel—the operator simply pushes it along the floor with the aid of a waist-high handle. The tape—in widths up to 4-inches—is fed off a roll-holding attachment, under the pressure wheel, and applied to the floor in a continuous strip.

The applicator's pressure wheel is engineered to apply the tape to all types of floor surfaces, including crevices and depressions often found in older wood and concrete floors.

FLUORESCENT STREET LIGHT

(Use Key # 768 on Inquiry Card on page 75)

A NEW, 6-foot fluorescent street light which provides a constant source of light with very little glare despite temperature changes, has been announced by the General Electric Company's Lighting and Rectifier Department. The new fixture employs four, 100 watt, "rapid start," fluorescent lamps. These newly-developed lamps will light within one second after being turned on, with no blink or flicker throughout their lives.

Light is reflected through a 6-foot plastic housing. The entire fixture weighs about 100 pounds and houses its ballast, making it a compact unit. The new street light can be operated on series or multiple circuits. The fixture has its plastic casing hinged to its aluminum hood, permitting rapid lamp replacement.

HAZARDOUS MATERIAL CONTAINER LABELS

(Use Key # 769 on Inquiry Card on page 75)

A METHOD for labeling containers holding hazardous materials is announced by the W. H. Brady Company, Milwaukee. Known as Quik-Label Container Markers, these labels stick to glass, metal, wood, plastic or ceramic containers, without moistening. They're made of cotton cloth, and are silicone

plastic-coated to resist oil, grease, grime and abrasion. The label surface is not affected by most of the materials the container may hold, the manufacturer reports.

The container Markers are printed with various warning words and precautionary instructions, and have a space provided on each marker for a self-sticking insert. Each insert has the specific name of the hazardous material—such as acid, naphtha, lacquer or kerosene—printed on it. Thus with container markers and inserts, a variety of labels can be made up on-the-spot, to identify the contents of different containers. The markers are printed black on a yellow background. Thirty-six different wordings are available on stock container markers. Insert cards, with the names of most of the hazardous materials in general usage, are available from stock. Special container markers and inserts can be made up in any wording, size, color and style.

INDUSTRIAL OVERSHOES

(Use Key # 770 on Inquiry Card on page 75)

THESE new neoprene rubbers are designed for men who wear overshoes on the job, and especially for men who work around oils, solvents, acids and other chemicals which damage ordinary rubbers. The new overshoe is suitable for gas stations, creameries, chemical plants, oil refineries, garages, paper mills and similar industrial locations.

The overshoes are unusual in that they have no fabric lining. Field tests, according to the manufacturer, Tingley Rubber Corporation have shown that omission of the fabric exacts no sacrifice in durability—and does result in important advantages both to the wearer and to the retailer or the plant storekeeper.

To the wearer, the most noticeable advantages are lightness and comfort. The shoes weigh 9 ounces apiece. Elasticity of the upper assures a firm grip on the shoe, so it won't pull off at the heel.

Elimination of the liner also permits the wearer to use the same pair of overshoes for street and work; he'll get a snug fit in both cases in spite of the workshoes' larger size. If dirt gets inside the rubbers they can be turned inside out, and the smooth inner surface sponged off.

To the retailer or the plant storekeeper, stretchability is the main advantage of the new shoe. Only 3 sizes need be stocked to take care of virtually all shoe sizes. The "small" overshoe fits shoe sizes 6 to 8, "medium" fits 9 to 9½, and "large" fits 9½ to 12.

INDUSTRIAL ARMOR

(Use Key # 771 on Inquiry Card on page 75)

A SPECIALLY designed line of protective clothing for industry, law enforcement bodies and hunters, is announced by the Armor Specialties Corp.

These vests are made of fibre glass plates and weather resistant laminated ballistic nylon. The maneuverability of laminated ballistic nylon makes it particularly suitable for many different uses. It can be applied not only to clothing but also to explosive shields and demolition barriers.

SAFETY NAIL DRIVER

(Use Key # 772 on Inquiry Card on page 75)

A NEW tool, called the Safe-T-Matic nail driver is announced by Safety Nail Driver Corp. The need for drills, plugs and screws is said to be eliminated when using the device. It has an alnico core and an automatic sliding sheath which hold a concrete stub nail and keep the nail in alignment while it is being driven.

Invented as a safety device for attaching metel laths, the new tool has found many uses for mechanics. It can be used for attaching metal straps to hold pipe in place; for attaching signs to any kind of surface, including brick, steel and concrete; and for attaching wires etc. to any surface.

POWDERED SOAP

(Use Key # 773 on Inquiry Card on page 75)

A NEW soap described as the first powdered soap to contain an unusual and new water softening ingredient, is announced by Calgon, Inc. Officials say the new hand soap offers excellent cleansing properties. In addition the formula is

said to meet the most critical requirements for a powdered hand soap with respect to safety to the skin.

Because of the new water conditioner in the formula, all the soap and other cleansing ingredients are able to function efficiently in a medium of perfectly softened water. Thus, too, it is free-rinsing. A small amount is effective even in removing greasy or stubborn types of soil. Further, it is non-packing, flows freely and contains nothing that will plug or damage drains or pipes. Although it feeds easily from any conventional dispenser, the manufacturer is introducing a dispenser as a companion product, to feed the hand soap in small amounts.

DISPOSABLE OXYGEN MASK

(Use Key # 774 on Inquiry Card on page 75)

A NEW disposable oxygen mask is now made at low cost for passenger airlines. Made from porous paper with a rebreather bag of Bakelite polyethylene film, the mask is flexible and highly resistant to moisture and most chemicals, as well as being very light in weight.

The new masks weigh 15 percent as much as conventional types, and last as long in stowage.

The manufacturer, Scott Aviation Corporation, believes the disposable mask's cost may be no more than the cost of sterilizing conventional masks after each use. Packaged in envelopes, these masks are easy to don and comfortable to wear. For passengers requiring oxygen, the mask can be quickly connected to the airliner's oxygen system. The masks also allow passengers to breathe in the event of cabin pressure failure where immediate descent is impossible. Designed to be discarded after one use, the mask can be reused by non-public air carriers if reasonable care is taken.

WATER-REPELLENT COATING

(Use Key # 775 on Inquiry Card on page 75)

A RECENT development of the Horn Research Laboratories—DEHYDRATINE NO. 22—contains polysiloxane resins generally known as silicones which are non-wettable materials and in coating form offer strong resistance to the passage of water. When treated with Dehydratine No. 22, pores of concrete, stucco and masonry become effectively water repellent.

These silicone compounds when applied to a clean, dry continuous masonry surface above grade are said to penetrate more deeply than conventional surface treatments.

The product is applied by brush or spray after defective joints have been repaired and consolidated by solid repointing. It then repels water, minimizes efflorescence while allowing the masonry to "breathe." Since Dehydratine No. 22 is a clear water-repellent it will not discolor or change the appearance of masonry surfaces while preserving them. It is acid and alkali resistant.

FLOOR SCRUBBING MACHINE

(Use Key # 776 on Inquiry Card on page 75)

THE Tornado floor scrubbing machine, manufactured by Breuer Electric Mfg. Co., features many innovations that are designed to speed floor cleaning as well as reduce operator fatigue. A new brush coupling device permits the operator to move the machine over the brush, start the motor and engagement becomes automatic. To remove the brush, the operator tips the machine up and gives the brush a slight kick with his foot. The brush comes off of the shaft immediately.

Greater convenience and less operator fatigue is the aim of the dual motor switches, one on each side of the handle so that the motor may be operated with either the right or left hand. The left hand switch also controls the valve to the solution tank for a steady flow or intermittent flow of scrubbing solution to the brush. The solution tank has been redesigned and streamlined for more com-

pactness and better balance. A clear gauge in the center of the tank reminds the operator at all times of the amount of solution remaining in the tank. The wheels of the floor machine automatically retract when the handle is raised. The height or length of handle may be adjusted to suit the size of all operators.

TOILET-CLEANING COMPOUND

(Use Key # 777 on Inquiry Card on page 75)

THE development of an ortho-acid emulsifier for the preparation of toilet bowl cleaners, containing hydrochloric acid, has been announced by Fine Organics, Inc.

One gallon of this emulsifier, which contains some orthodichlorbenzene, when mixed with 9 gallons of 18° Be or 27.92 percent Hydrochloric acid technical, will give a finished bowl cleaner containing approximately 23 percent hydrochloric acid by weight. This mixture is a stable emulsion. No separation is noted after one hour. The weight per gallon is 10.4 lbs. The finished product has hygienic odor and bactericidal properties. When compounded into a toilet bowl cleaner, the emulsifier will effectively remove grease, dirt, and iron stains.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Identification Security Systems 456
Philadelphia Badge Co., Inc. This 16-page, 2-color bulletin discusses the use of badge security systems. Types of identification are listed and explained, and various plans for putting security systems into operation are suggested. Plastic and metal badges are included; and machines for assembling badges are listed and illustrated, as are various spare parts for identification insignia.

Lightning Protection 457
Independent Protection Co., Inc. A 20-page, multi-colored booklet on lightning protection for smoke-stacks and chimneys, shows lightning damage and contains sectional drawings showing typical protection installations. Various parts and components are illustrated and explained separately. Instructions for installation are also given.

Hoist Phone 458
Mine Safety Appliances Co. A voice communication system between hoisting engineer and cage at any level is the subject of this 4-page, 2-color bulletin. All parts of the phone system are illustrated and described, the features of the device are outlined and its uses are explained. The system is said to be able to utilize existing wiring, cable or shaft frames for carrying the signal.

Laboratory Safety 459
Fisher Scientific Co. A 6-page illustrated booklet, this survey of the particular problems of laboratory safety, contains many answers to specific laboratory hazards. Included are sections on test-tube handling, hoods, radiation, protective clothing and marking.

Radiation Lab Equipment 460
Nuclear Instrument & Chemical Co. Included in this new 36-page catalog of equipment is a section devoted to helping the new worker using radioactivity select the type of equipment he will need for any particular type of counting work. Among the new equipment listed in the catalog are a new sample changer, medical counting system, new personnel monitoring systems and other counters.

MATERIALS-HANDLING AIDS

Crane Signals Chart 461
Macwhyte Co. A wall chart that combines crane signals and suggestions for proper use of slings on one side and tables listing strengths and safe-loads for the company's slings on the other, is printed in 2 colors and measures 11" by 14". Sling strengths shown run up to 243 tons from 4/10ths of a ton.

Safety Clamps 462
Safety First Supply Co. Illustrated and described in this 2-color, 4-page bulletin is the company's line of safety clamps (vertical and horizontal), barrel clamp, and coils of strip clamp. Uses for the clamps include racking plates, transporting sheet metal to storage or shops, handling during job at press and lifting finished materials. Jaw surfaces are toothed and can be replaced separately.

Sling Chains 463
Cleveland Chain and Mfg. Co. Beginning with a discussion of the relative merits of wrought iron and alloy steel chains, this 32-page catalog covers the company's entire line of sling chains. Fully illustrated, the booklet gives specifications and other data for various types of chains, and includes sketches of special assemblies for particular problems. Safety rules for the use of sling chains are also given.

Wire Rope 464
American Chain and Cable Co., Inc. A 16-page, 2-color, illustrated booklet, designed to recommend the best wire rope for each major type of equipment used by contractors, includes wire rope recommendations for bulldozers, back fillers, angle dozers, and skimmers. Other equipment covering construction is touched on. Specifications and other data are also given for each type of rope.

FIRE PROTECTION

Air Conditioning Smoke Alarm 465
Ess Instrument Co. An electric eye unit, guarding against smoke circulated by air conditioning system causing panic danger or merchandise hazard, is the subject of this 4-page, 2-color bulletin. Unit will give alarm and/or shut down circulating system. This checks smoke that enters from an outside source as well as from fire in the system itself. All three types of the company's smoke control alarm are illustrated and diagrammed.

Extinguishing System 466
American-LaFrance Corp. Illustrated and detailed in this 8-page booklet is the company's carbon-dioxide extinguishing system. Photographs and diagrams show how the system operates to smother fire by flooding the air with CO_2 instead of oxygen which the fire needs in order to burn. How the system is applied to varying situations in industry is carefully covered in the literature.

Extinguisher Converter 467
C-O-Two Fire Equipment Co. A cartridge unit that permits the conversion of soda-acid type extinguishers into pressure, cartridge-operated water type extinguishers is dealt with in this 4-page information sheet. Featured are easy assembly, elimination of annual recharging, anti-freeze characteristic of converted type and quick re-charging when necessary.

MEDICAL AIDS

Athlete's Foot Control 468
Huntington Laboratories, Inc. This 2-color, 6-page folder discusses the various forms for using the company's anti-athlete's foot product. It is available as a foot powder, a foot bath, a disinfectant cleanser and floor cleaner. The product is designed both to destroy the fungus and prevent reinfection.

Salt Tablets 469
United States Safety Service Co. Impregnated salt tablets, designed to avoid nausea and get salt into the system quickly, are the topic of this 2-color, 2-page bulletin. Among other qualities claimed for the tablets are resistance to high temperatures and rough handling, moisture resistant, controlled dissolving and ability to withstand long periods of storage without deteriorating.

Portable Insect Sprayer 470
West Disinfecting Co. Pictured and fully described in this 4-page, 2-color bulletin is the company's wheeled insect sprayer which converts insecticide into a finely atomized, highly-concentrated fog. One filling is said to fog 400 thousand cubic feet. Hand gun attachment can be used for spraying smaller areas. Other features include 3 gallon insecticide tank and easy maneuverability.

Stretcher 471
George H. Holzbog Co. This one-page bulletin illustrates and describes a light and sturdy stretcher for emergency use. Specifications are included. Litter is quickly collapsible and readily opened. It is hinged and cross-braced.

Germicide 472
Sindar Corp. An annotated bibliography on results achieved with hexachlorophene, this 16-page booklet gives various reports on the effectiveness of the germicide and antiseptic. Value of the booklet is that the reports are unedited or changed and are chiefly made by disinterested investigators. The antiseptic is supposed to be more effective than a normal surgical wash-up.

BUILDING MAINTENANCE

Sectional Scaffolding 473
Patent Scaffolding Co. Aluminum sectional scaffolding, containing special safety features, is described and illustrated in this 4-page, 2-color

(Continued next page)

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READERS INQUIRY CARD

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Free Bulletins (Continued)

bulletin. The folder contains information about both ladder and rolling types of sections, pictures on-the-job applications, specifications and illustrations of some of the structures possible with the various sections.

Anti-Rust Paint 474
Paramount Industrial Products Co. A 2-color, 2-page catalog sheet, illustrated, states that the company's anti-rust paint stops rust in one application without surface preparation of any kind. Colors available and ways of application are also detailed. Additional features include resistance to temperature changes, chemicals, gases, salt water and ability to be applied over damp surfaces.

Color Painting Plan 475
E. I. du Pont de Nemours & Co. (Inc.). Detailed in this 32-page booklet is a plan for making the best use of color in industrial painting. The general rules about the use of color begin the literature, the various highlighting and relaxing uses of color to prevent eyestrain in industry continue the story, and the psychological values of proper colors in painting finish the editorial material. Illustrated in several colors, the booklet also suggests colors of paint to buy, and describes the use of color in safety.

Safer Solvents 476
Fine Organics Inc. Two types of safer solvents, slow and fast drying liquids designed to clean electrical and equipment parts, are described and specifications listed in this 2-page bulletin. Features emphasized include high flash points, minimized toxicity, dermatitis freedom, corrosion freedom and ability to remove grease and oil without damage to surfaces or materials of construction.

Motorless Floor Sweeper 477
Handling Device Co., Inc. A 4-page, 2-color bulletin describes a mechanical motorless sweeper which is designed to brush up floor dirt into its self-contained hopper. Among advantages claimed are lightness, ease of operation, no risk of fire, fewer repairs, one-man operation and a side brush for thorough cleaning even against walls and in corners.

AIR CONTROL

Hoses 478
American Ventilating Hose Co. This 12-page catalog gives performance details, uses, types and prices on the company's hosing for moving air, gases and materials via pressure, suction and gravity. Illustrated are retractable hose, neoprene coated fabric hose, couplings and spiral-reinforced lightweight flexible hose. Advantages listed are weight, airtightness, durability, flexibility and strength.

Precipitator Dust Collectors 479
American Air Filter Co. Illustrated and described in this 4-page, 2-color folder are dust collectors of the dynamic and hydro-static precipitator types. Three basic types are described with arrangement for differing applications. The first is a dust separator and exhauster for granular process dust, the second a precipitator with water to collect light dust particles, and the third a precipitator which uses water and centrifugal action to remove dust as a sludge.

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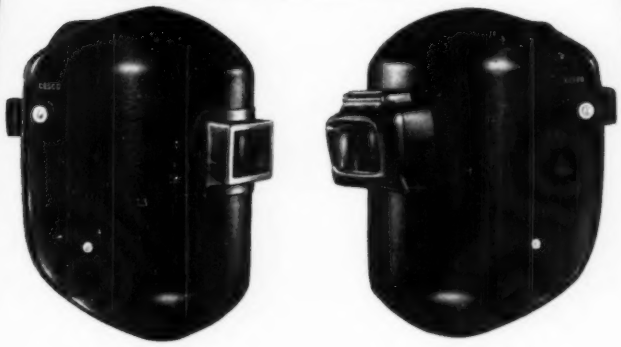

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